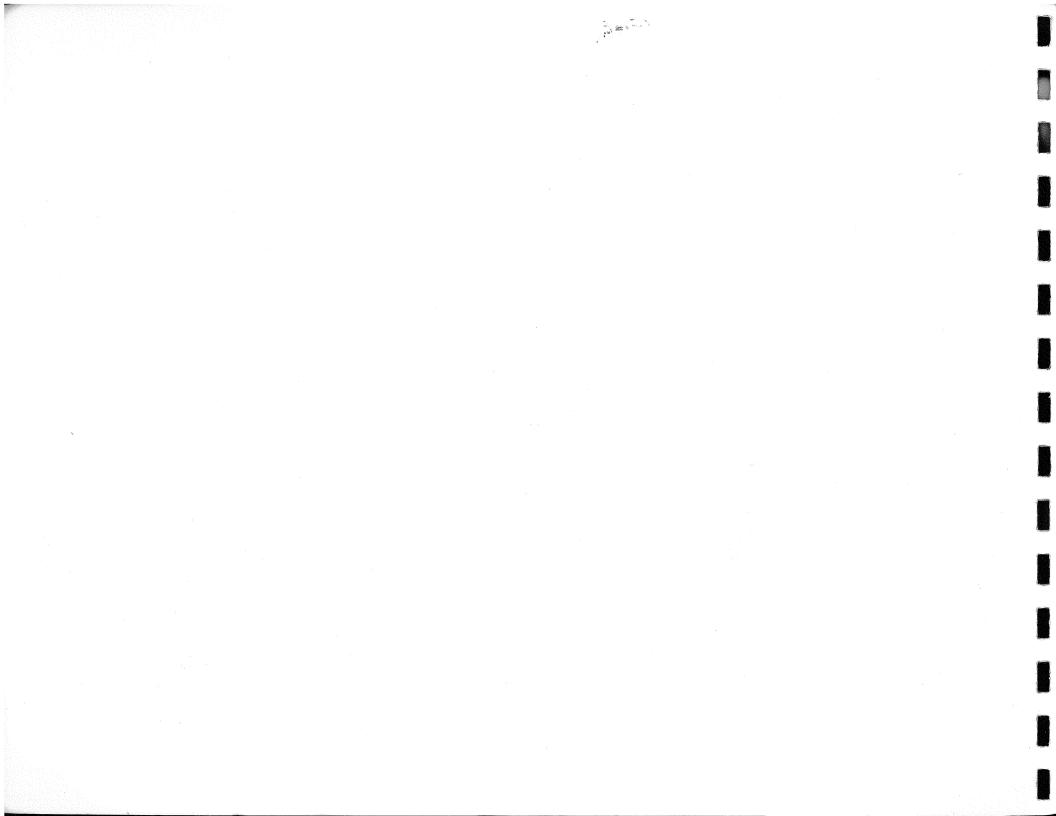
Instruction Manual Volume 3



μ-COMP DDP-516 general purpose I/C digital computer



Doc. No. 130071622D M-968

Instruction Manual

DDP-516 GENERAL PURPOSE COMPUTER

Volume III

DRAWINGS

January 1969

Honeywell

Original printing Sept. 1966
Revised Feb. 1967, July and August 1968, and January 1969
Reprinted September 1968, and January 1969

COPYRIGHT 1969, by Honeywell Inc., Computer Control Division. Contents of this publication may not be reproduced in any form in whole or in part, without permission of the copyright owner. All rights reserved.

NOTE

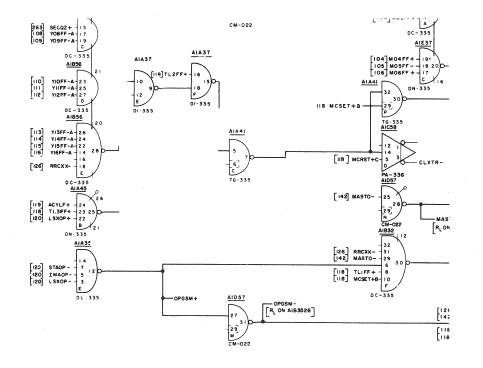
This manual includes drawings revised in accordance with ECO 3255, 3467, 3686, 3704, 3718, 3767, 3839, 3990, 4084, 4131, 4172, 4217, 4226, 4286, 4350, 4483, 4464, 4763, 4895, 5170, 5641, 5724, 5776, 5906, and 6154.

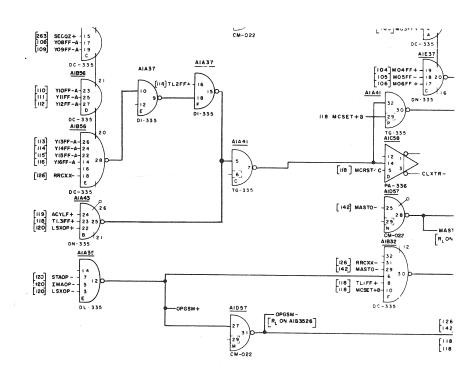
HONEYWELL LIMITED, COMPUTER CONTROL DIVISION

Instruction Manual Vol III DDP-516 General Purpose Computer Doc.No. 130071622D M968 Please note the following printing error on LBD No. 0.128, Page 29

LBD No. 0.128 READS

LBD No. 0.128 SHOULD READ





경영합의 경우 경우 전환 경우 경우 경우 경우 경우 경우 등 경우 등 경우 등 경우 등 경우		
물을 받는 것을 받는 것을 하는 것이 없는 것이 되었다. 그는 것이 없는 것이 하는 것이 있는 것이 말을 하는 것이 없는 것이 		
생활이 되었다. 하면 가는 그 사람들은 사람들이 되었다. 생활하는 물론에 하나는 그들이 나는 것이 되었다.		
		La contraction de la contracti
		•
	•	
		i de la companya de
		•
		· _

CONTENTS

Logic Page No.	<u>Title</u>	Dwg No.	Rev	Page	Logic Page No.	<u>Title</u>	Dwg No.	Rev	Page
0.100	DDP-516 PAC Allocation	016252	Н	1	0.118	DDP-516 TLG and Clock Block Diagram	015743	В	19
0.101	DDP-516 Column No. 1 Block Diagram	015726	С	2	0.119	DDP-516 Phase Register Block Diagram	015744	С	20
0.102	DDP-516 Column No. 2 Block Diagram	015727	D	3	0.120	DDP-516 F Register and OP	015745	В	21
0.103	DDP-516 Column No. 3 Block Diagram	015728	В	4	0.121	Decode Block Diagram DDP-516 Shift Counter	015746	В	22
0.104	DDP-516 Column No. 4 Block Diagram	015729	В	5	0.122	Block Diagram DDP-516 Control Logic A	015747	D ·	23
0.105	DDP-516 Column No. 5	015730	В	6	0.123	Block Diagram DDP-516 Control Logic B	015748	С	24
0.106	Block Diagram DDP-516 Column No. 6	015731	В	7		Block Diagram			
0.107	Block Diagram DDP-516 Column No. 7	015732	В	8	0.124	DDP-516 Control Logic C Block Diagram	015749	D	25
0.108	Block Diagram DDP-516 Column No. 8	015733	В	9	0.125	DDP-516 Control Logic DE Block Diagram	015750	E	26
	Block Diagram DDP-516 Column No. 9	015734	В	10	0.126	DDP-516 Control Logic H Block Diagram	015751	Н	27
0.109	Block Diagram				0.127	DDP-516 Control Logic S Block Diagram	015752	E	28
0.110	DDP-516 Column No. 10 Block Diagram	015735	В	11	0.128	DDP-516 Control Logic MX	015753	D	29
0.111	DDP-516 Column No. 11 Block Diagram	015736	В	12	0.129	Block Diagram DDP-516 Control Logic PY	015754	D	30
0.112	DDP-516 Column No. 12 Block Diagram	015737	В	13	0.130	Block Diagram DDP-516 Shift End Effects	015755	С	31
0.113	DDP-516 Column No. 13 Block Diagram	015738	В	14	0.132	Block Diagram DDP-516 Console Lamp	015756	В	32
0.114	DDP-516 Column No. 14 Block Diagram	015739	В	15	0.134	Drivers Block Diagram DDP-516 Control Logic	015757	F	33
0.115	DDP-516 Column No. 15	015740	В	16		Input/Output Block Diagram			
0.116	Block Diagram DDP-516 Column No. 16	015741	В	17	0.135	DDP-516 Interrupt Address Encoding Block Diagram	015758	С	34
0.117	Block Diagram DDP-516 Adder Carry Net Block Diagram	015742	A	18	0.137	DDP-516 M-Register Expansion	015760	В	34A

CONTENTS (Cont)

Logic Page		$D_{\mathbf{W}\mathbf{g}}$				Logic Page		$D_{\mathbf{W}}\mathbf{g}$		
No.	Title	No.	Rev	Page		No.	Title	No.	Rev	Page
0.138	DDP-516 Output Buses Block Diagram	015761	D	35		0.158	Data Channel Bits 11 and 12 Block Diagram	015423	A	53
0.139	DDP-516 Algorithms Table Block Diagram	016157	Α	36		0.159	Data Channel Bits 13 and 14 Block Diagram	015424	A	54
0.140	DDP-516 Console Indica- tors Block Diagram	015762	В	37		0.160	Data Channel Bits 15 and 16 Block Diagram	015425	Α	55
0.141	DDP-516 Console Switches Block Diagram	015763	E	38		0.161	Data Channel Bit 17 Block Diagram	015426	Α	56
0.142	DDP-516 Console and Memory Cable Connector	015764	В	39		0.162	Timing Diagram Memory Block Diagram	015427	D	57
0.143	DDP-516 Input/Output Cable Connectors	015765	В	40		0.199	Memory Input/Output Cable Block Diagram	015428	A	58
0.144	DDP-516 Option Jumpers	015766	A	41		0.340	ASR Controls	015859	\mathbf{F}	59
0.145	DDP-516 Y-Register Ex-	015767	C	42		0.341	ASR Buffer Register	015860	F	60
. 0 140	pansion Block Diagram DDP-516 Power Distribution	015768	G	43		0.342	ASR Input/Output Interface	015858	F	61
0.148	DDP-516 Fower Distribution	013700	ď	40		0.345	PAC Allocations (ASR)	015654	D	62
0.149	DDP-516 Memory Drive	015769	В	44		0.346	ASR Connectors (ASR 33/35)	015861	C	63
	Fanout Block Diagram						Coding Drawing DDP-516	014087	v	64
0.150	Timing and Control Block Diagram	015415	D	45			(Sheet 1 of 9)			
0.151	Address Buffer Block	015416	A	46			Coding Drawing DDP-516 (Sheet 2 of 9)	014087	V	65
0.151	Diagram	015110		10			Coding Drawing DDP-516	014087	V	66
0.152	X Decoding and Selection	015417	В	47			(Sheet 3 of 9)			
	Block Diagram						Coding Drawing DDP-516	014087	V	67
0.153	Data Channel Bits 1 and 2 Block Diagram	015418	A	48			(Sheet 4 of 9)	014087	V	68
0.154	Data Channel Bits 3 and	015419	A	49			Coding Drawing DDP-516 (Sheet 5 of 9)	014001	V	00
	4 Block Diagram						Coding Drawing DDP-516	014087	v	69
0.155	Data Channel Bits 5 and	015420	Α	50			(Sheet 7 of 9)			
0.156	6 Block Diagram Data Channel Bits 7 and	015421	A	51			Coding Drawing DDP-516 (Sheet 8 of 9)	014087	V	70
0.150	8 Block Diagram	013461	Λ.	21			Coding Drawing DDP-516	014087	v	71
0.157	Data Channel Bits 9 and 10 Block Diagram	015422	A	52	iv	· 7	(Sheet 9 of 9)	•		

CONTENTS (Cont)

Logic Page No.	Title	Dwg No.	Rev.	Page
	Coding ICM-40	010713	D	72
	Cable Routing Drawing (Sheet 1 of 2)	014417	E	73
	Cable Routing Drawing (Sheet 2 of 2)	014417	E	74
	Memory Module Assembly Drawing DDP-516	013005	В	75
0.191	PAC Allocation A4/A5, 4K Tiltout Assembly	017110	С	76
0.192	PAC Allocation 4A/A5, 8K Tiltout Assembly	017111	С	77
0.193	PAC Allocation A4/A5, 12K Tiltout Assembly	017112	С	78
0.194	PAC Allocation A4/A5, 16K Tiltout Assembly	017113	С	79
0.195	PAC Allocation B1/B2, Back Tiltout Assembly	017114	В	80
0.196	PAC Allocation B1/B2, 16K Tiltout Assembly	017115	В	81
	Coding 516N	020350	D	82

FOREWORD

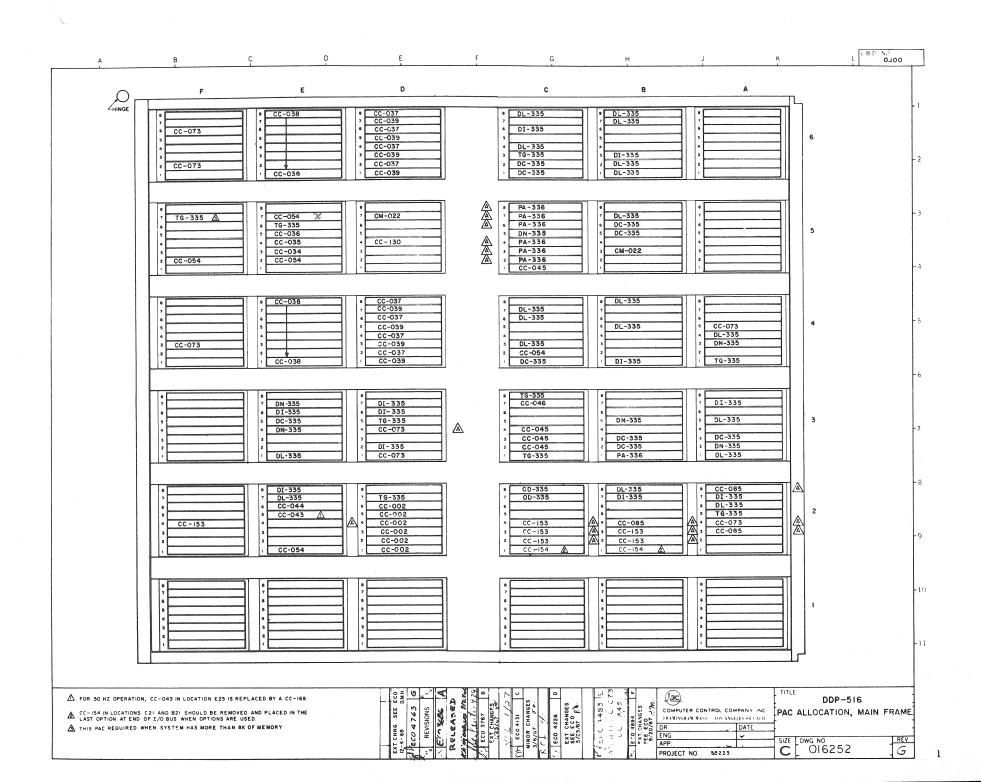
This volume contains electrical and mechanical reference drawings for the DDP-516 General Purpose Computer. Mechanical drawings follow the logic drawings. The logic drawings are arranged according to the LBD numbers that appear in the upper right-hand corner of each drawing. System cabling information, cable routing diagrams, the main frame PAC location diagram, and the main frame and option cabinet coding diagrams follow the logic diagrams.

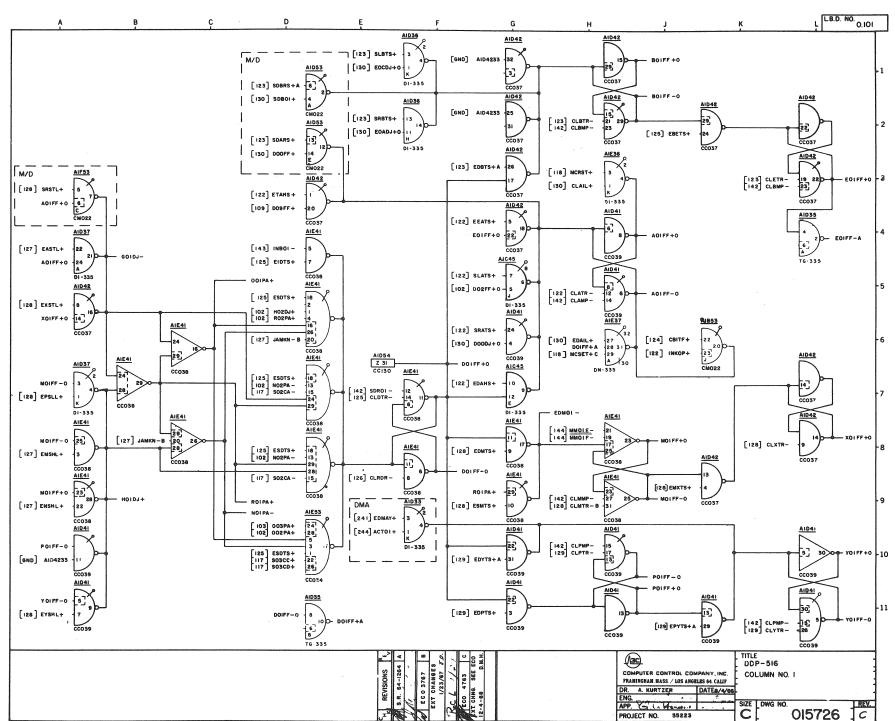
The origins of input signals are shown at their destinations on the logic drawings. For example, the input signal EASTL+ on LBD number 0.101, coordinates A4, is preceded by [127], the LBD number of the logic drawing on which the signal originates.

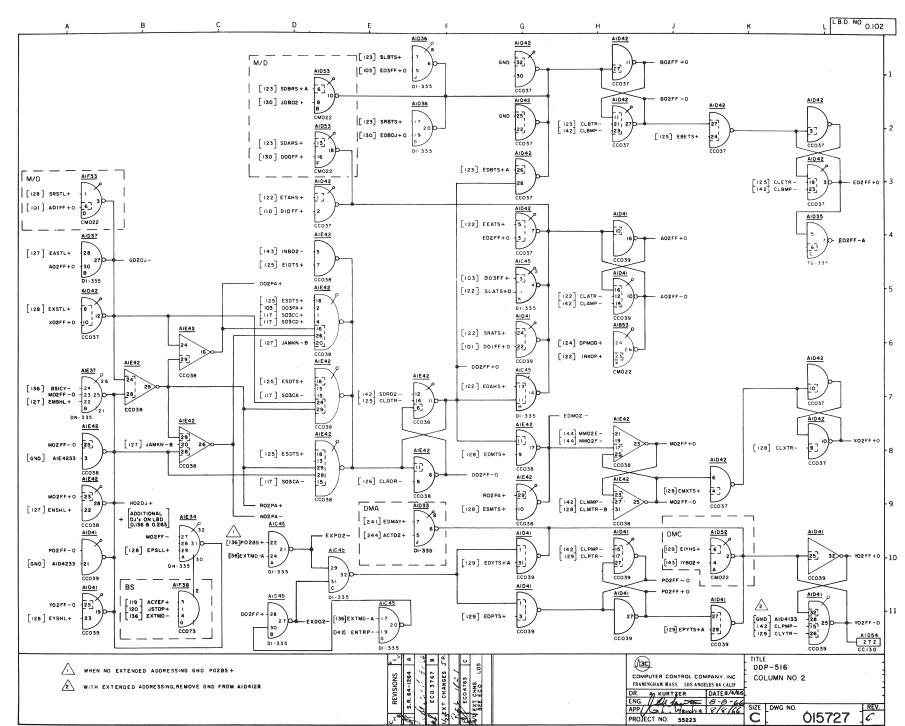
Volume I contains maintenance data and the theory of operation of the Computer Control Processing unit, Memory, and the standard Input/Output interface equipment. The drawings contained in this Volume (III) are referenced throughout Volume I.

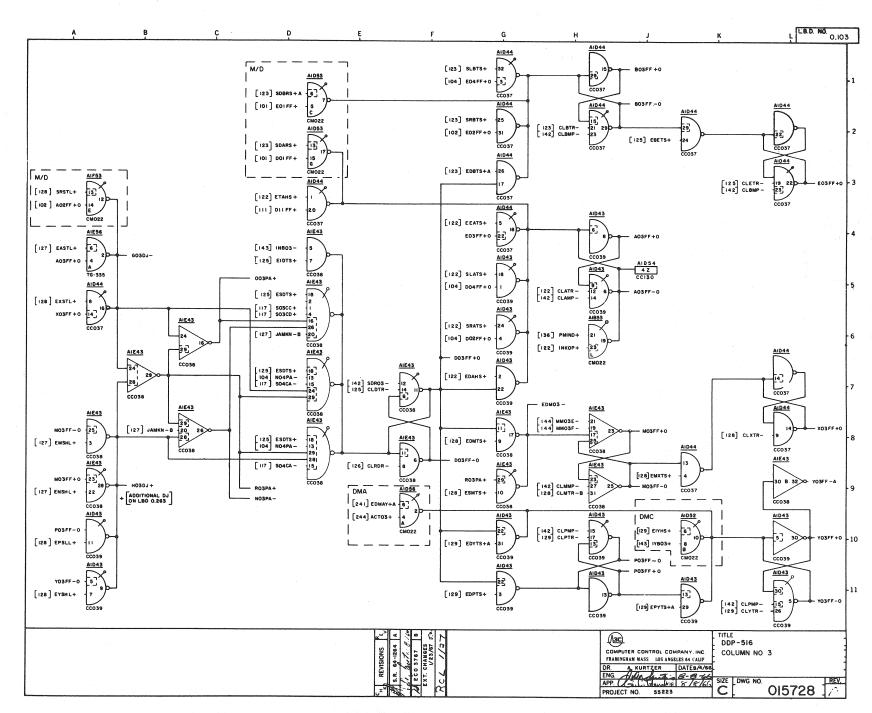
Volume II contains the flow charts and instruction analyses of all DDP-516 instructions (except for those that apply to specific options, such as the High Speed Arithmetic Unit). Volume II also contains the function index, which lists the signal mnemonics in alphanumerical sequence. Their definitions, and source are also included.

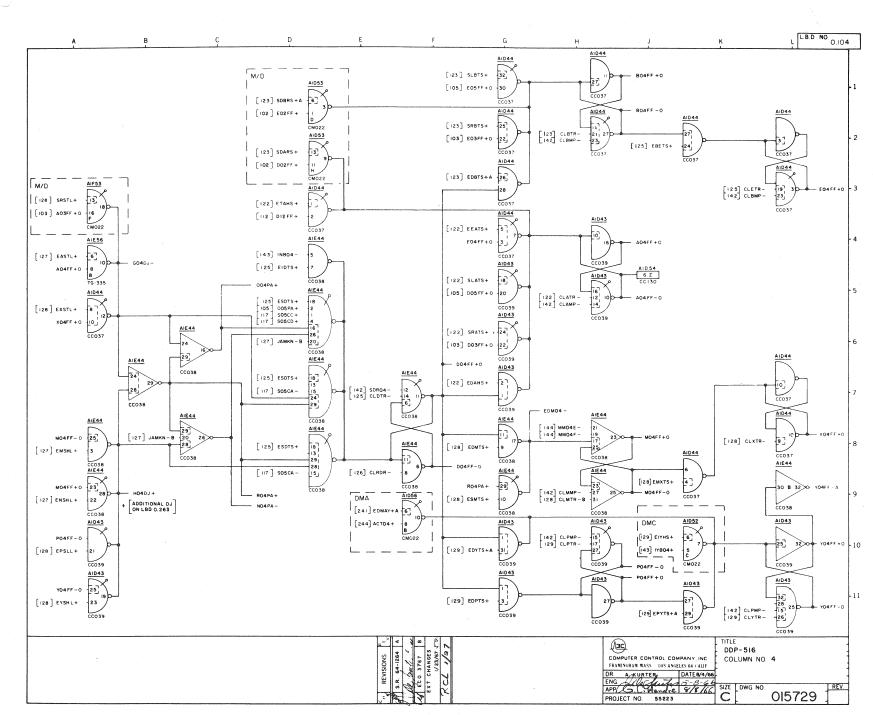
The reader should take note of areas on the LBDs which are within dashed lines, such as the gate on LBD 0.101, A3. The dashed-line areas contain logic used for certain options. This logic is present only when the computer is equipped with the option noted within the dashed line area. An example is the High Speed Arithmetic Unit.

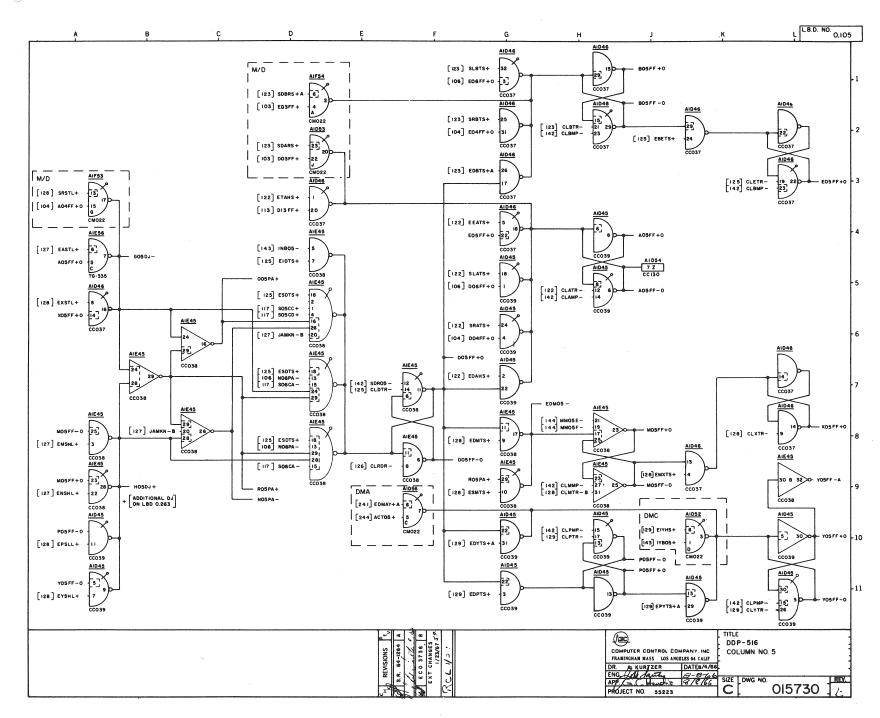


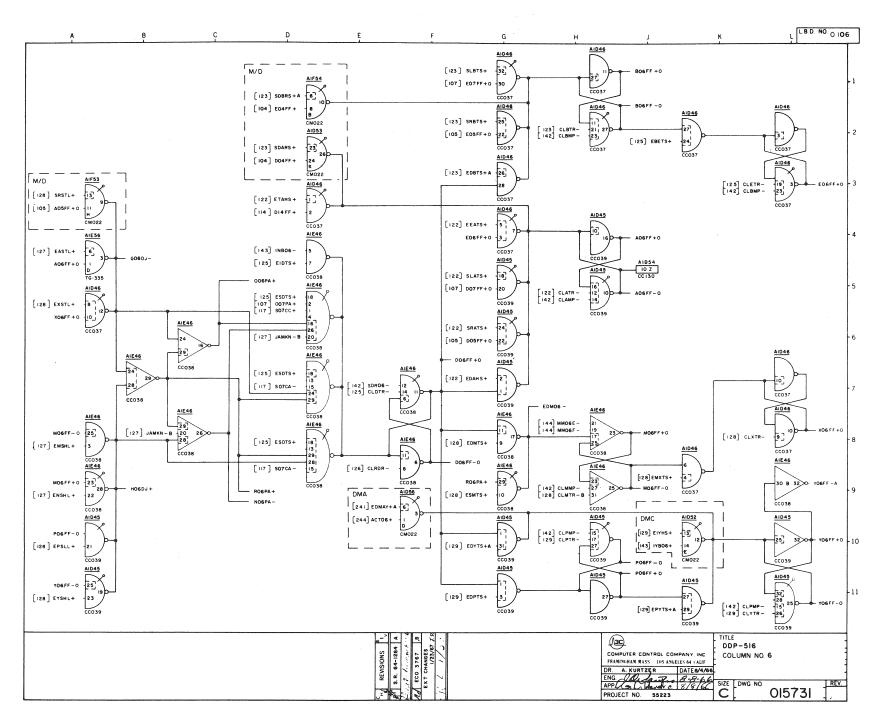


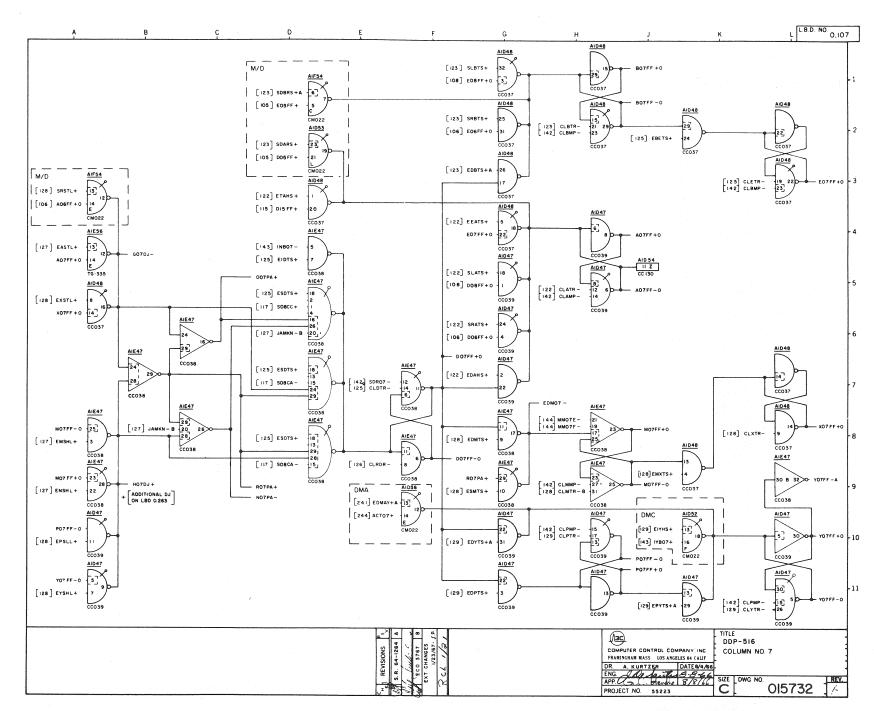


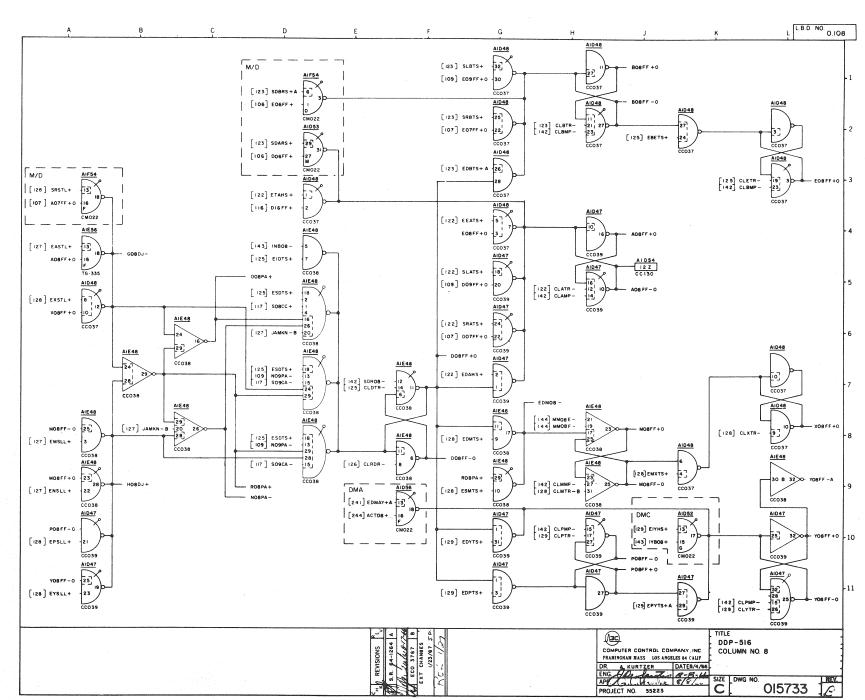


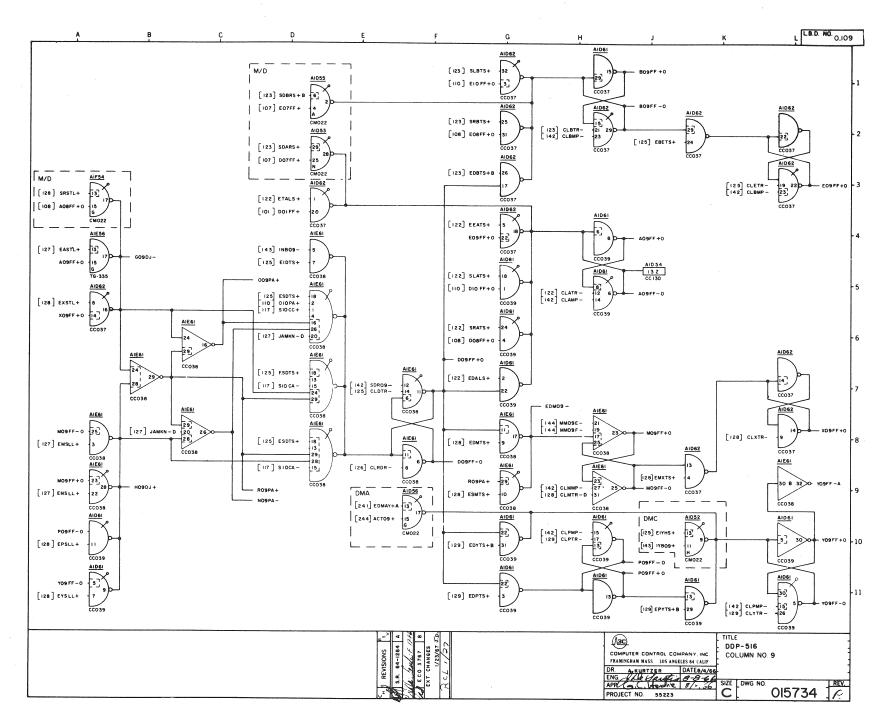


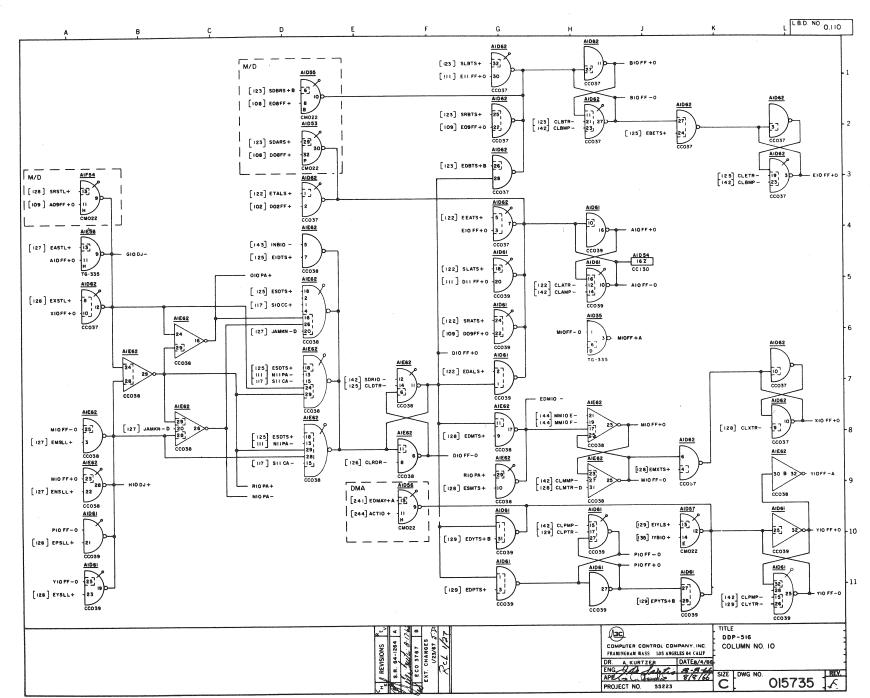


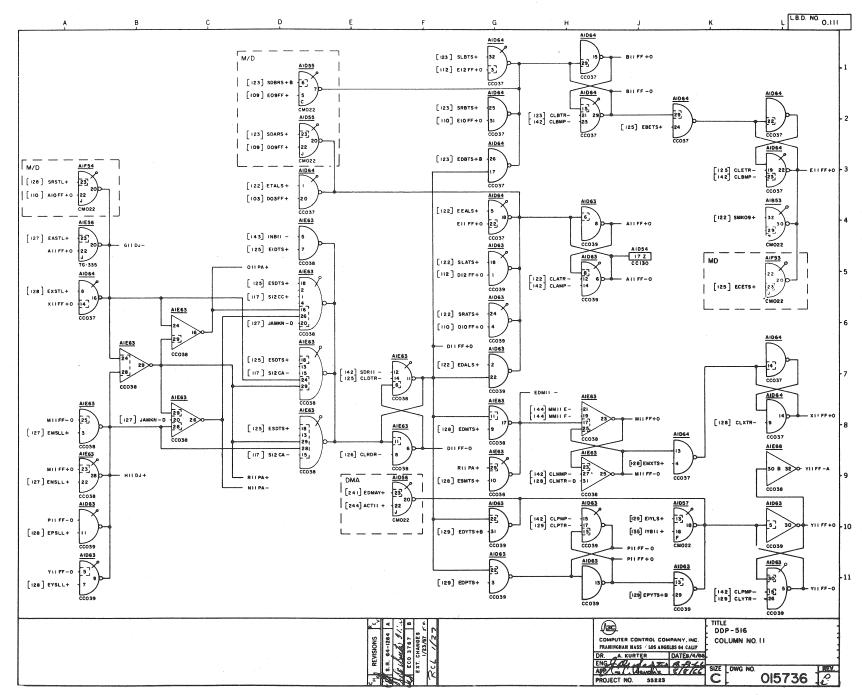


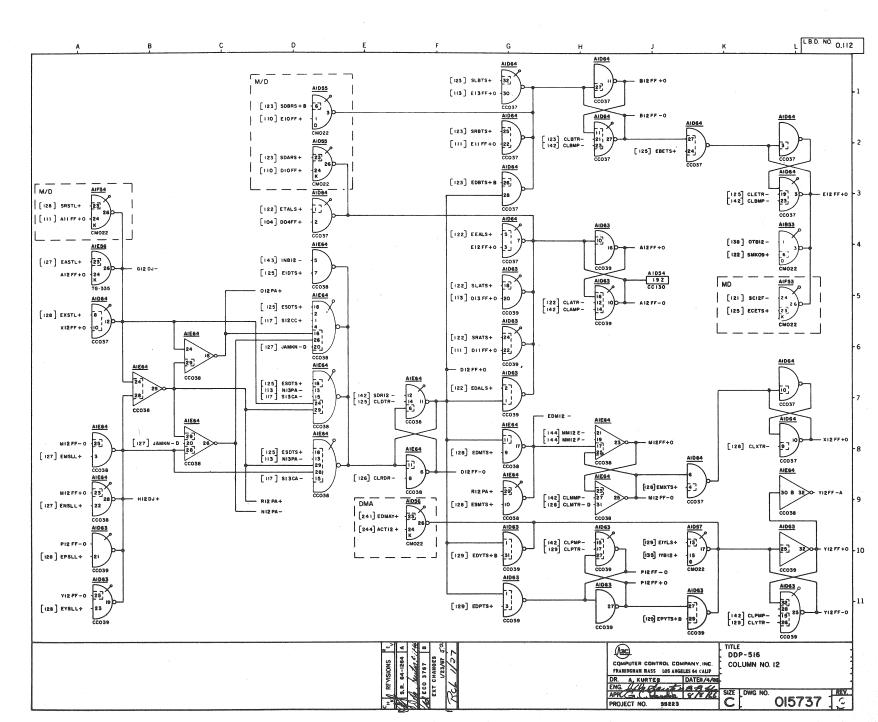


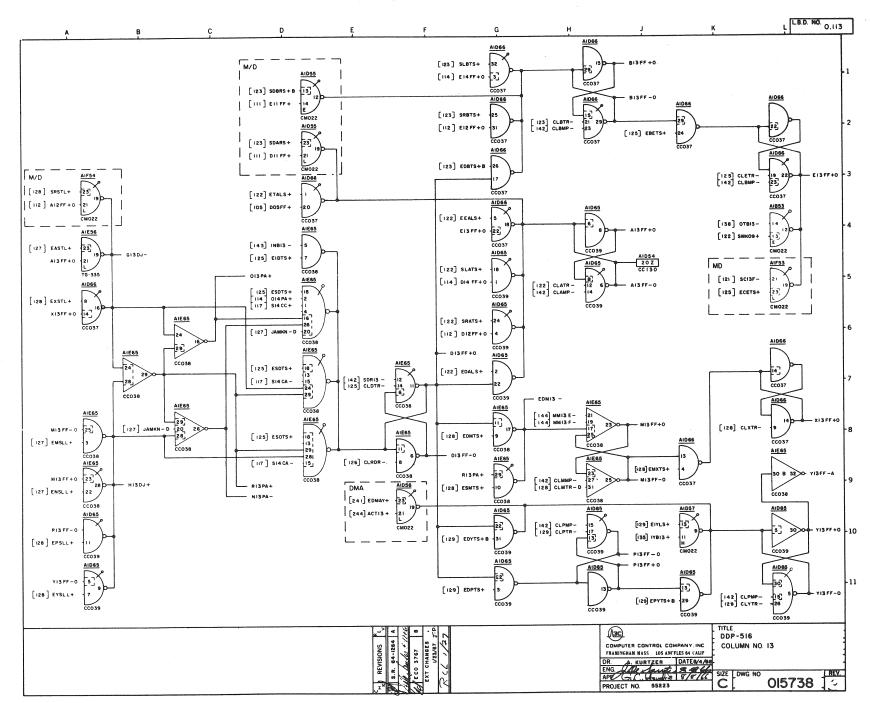


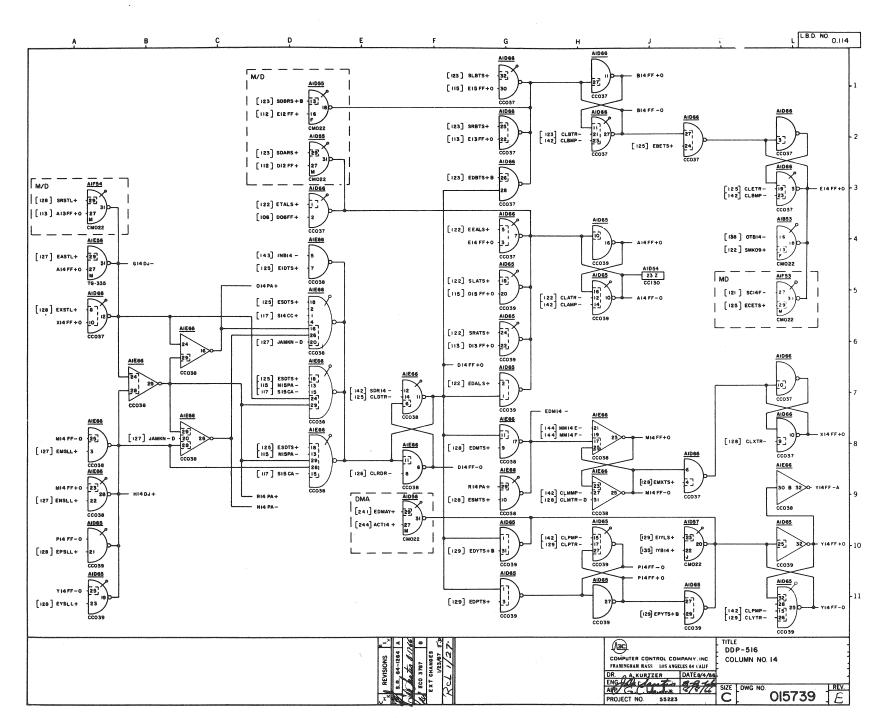


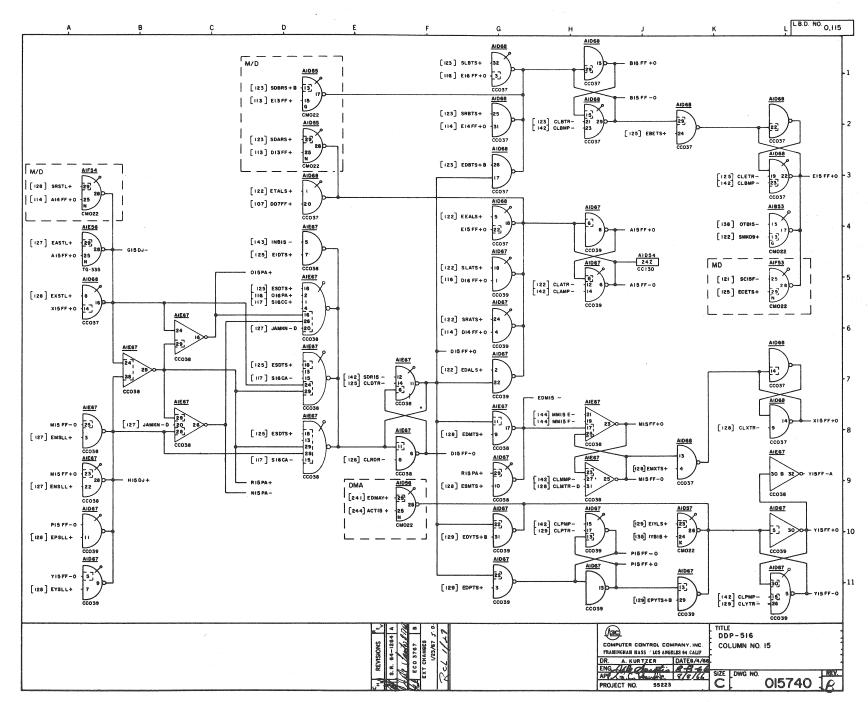


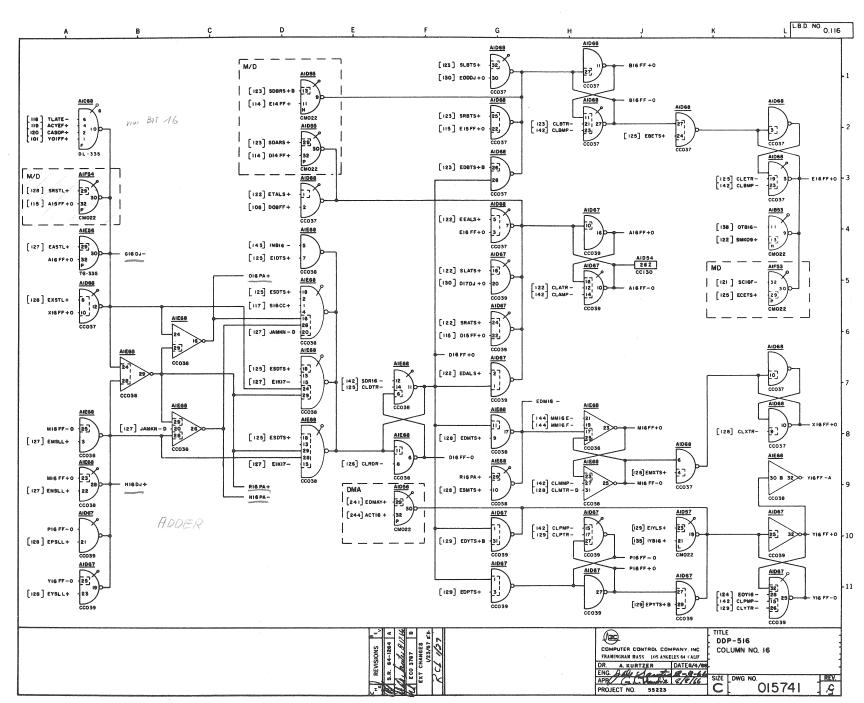


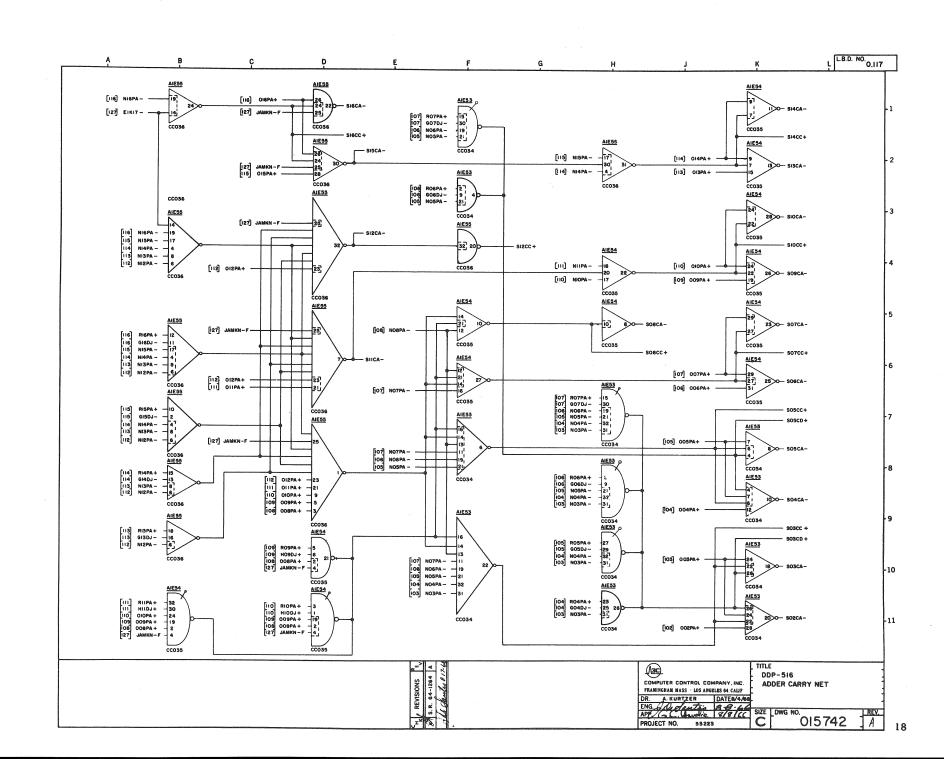


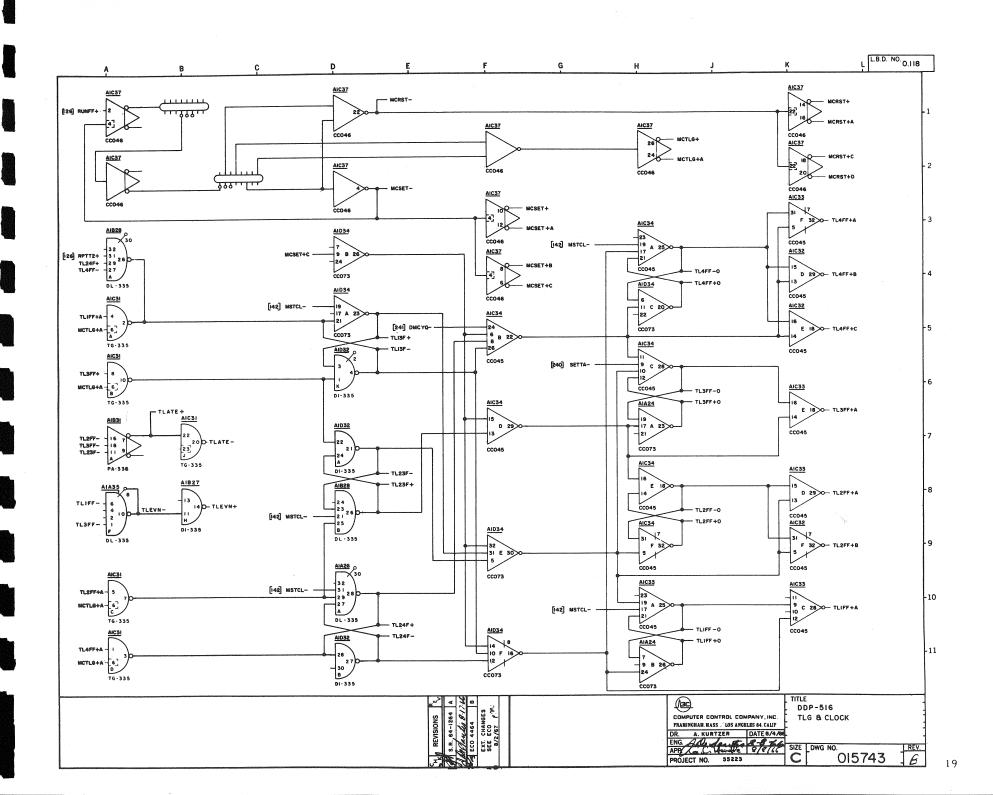


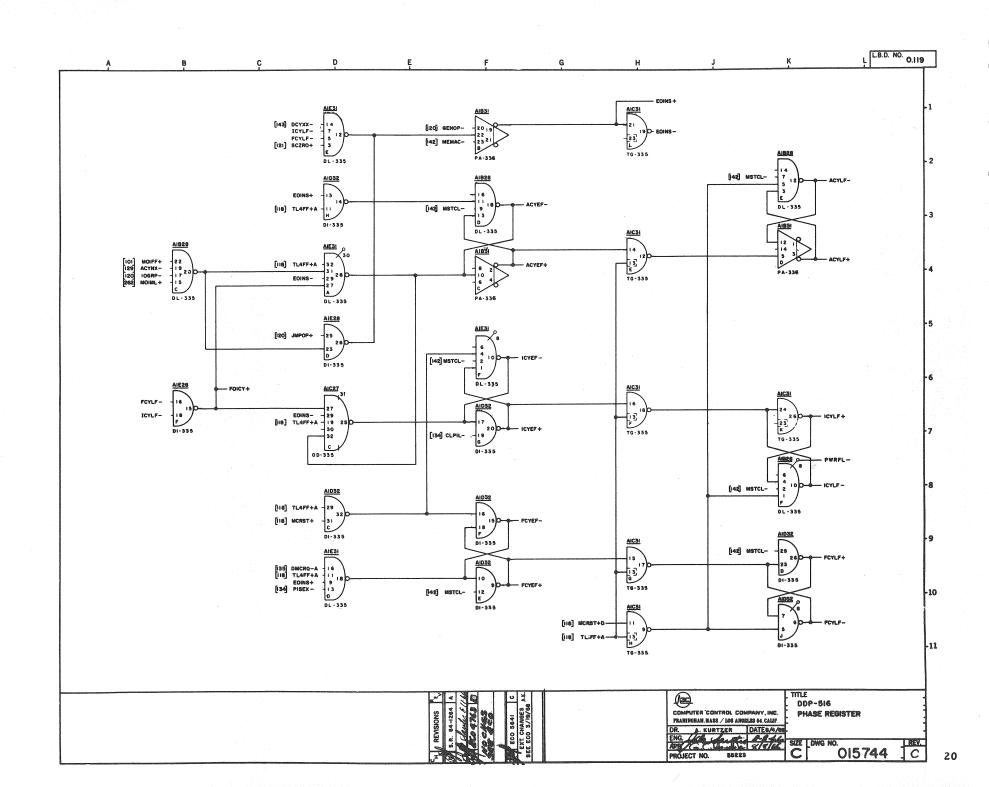


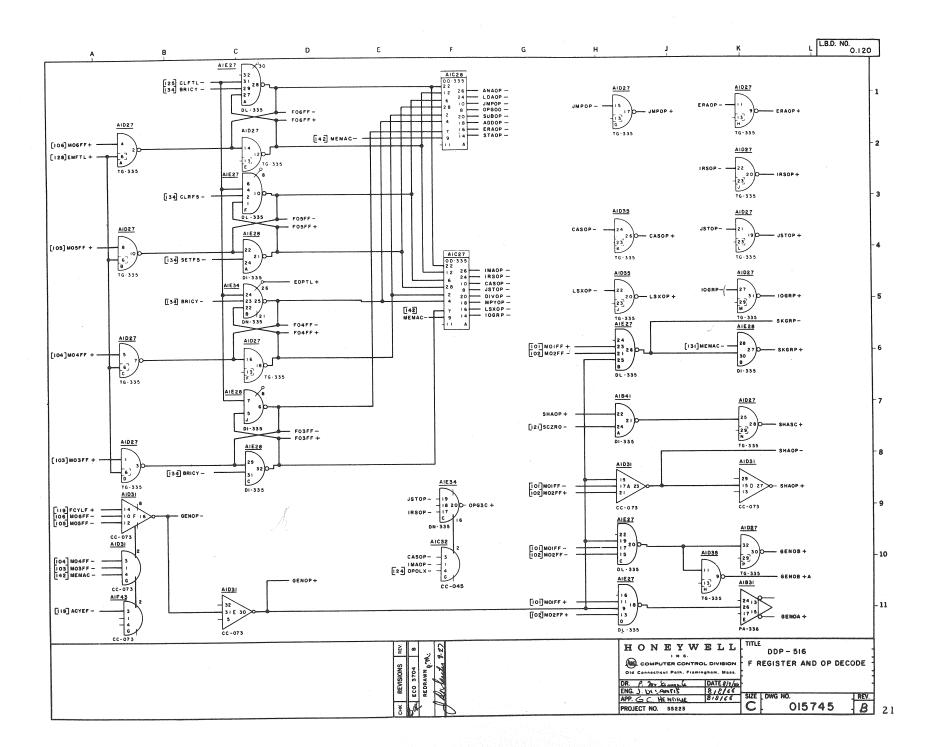


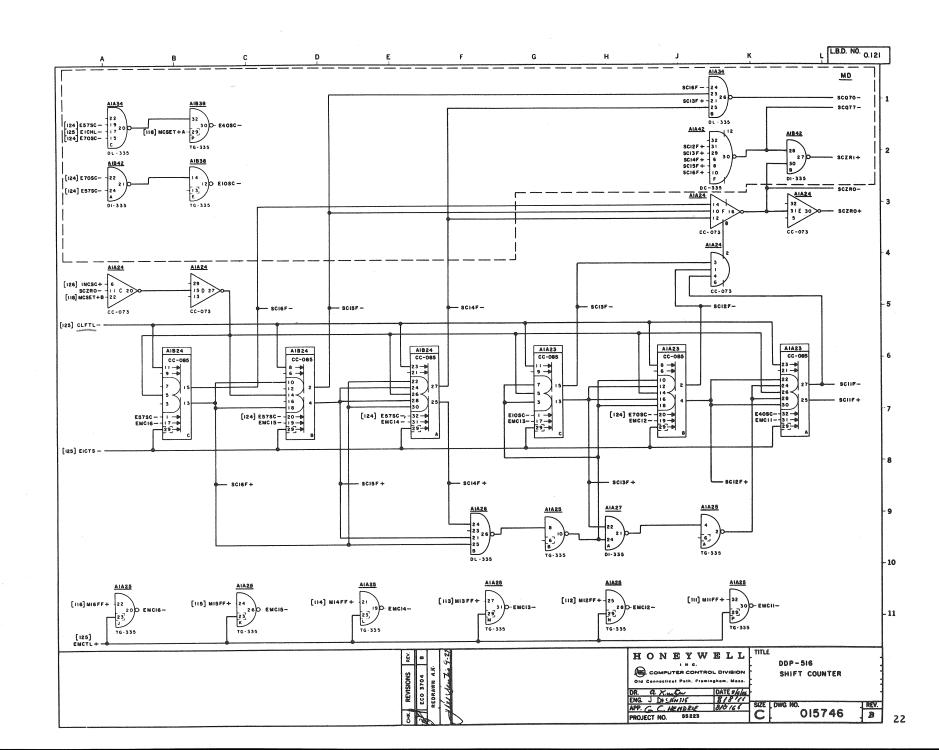


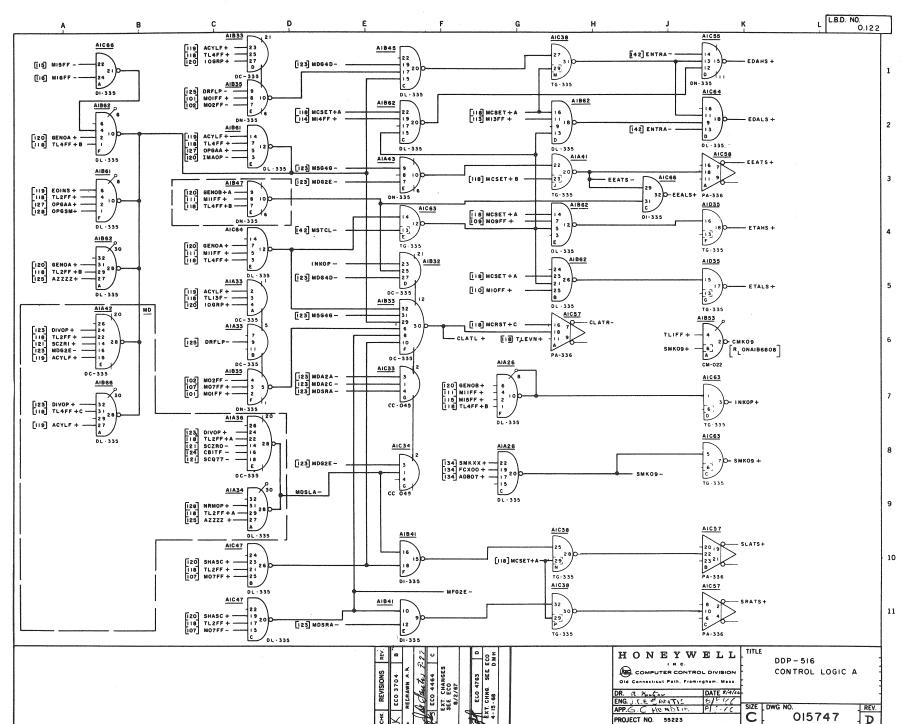


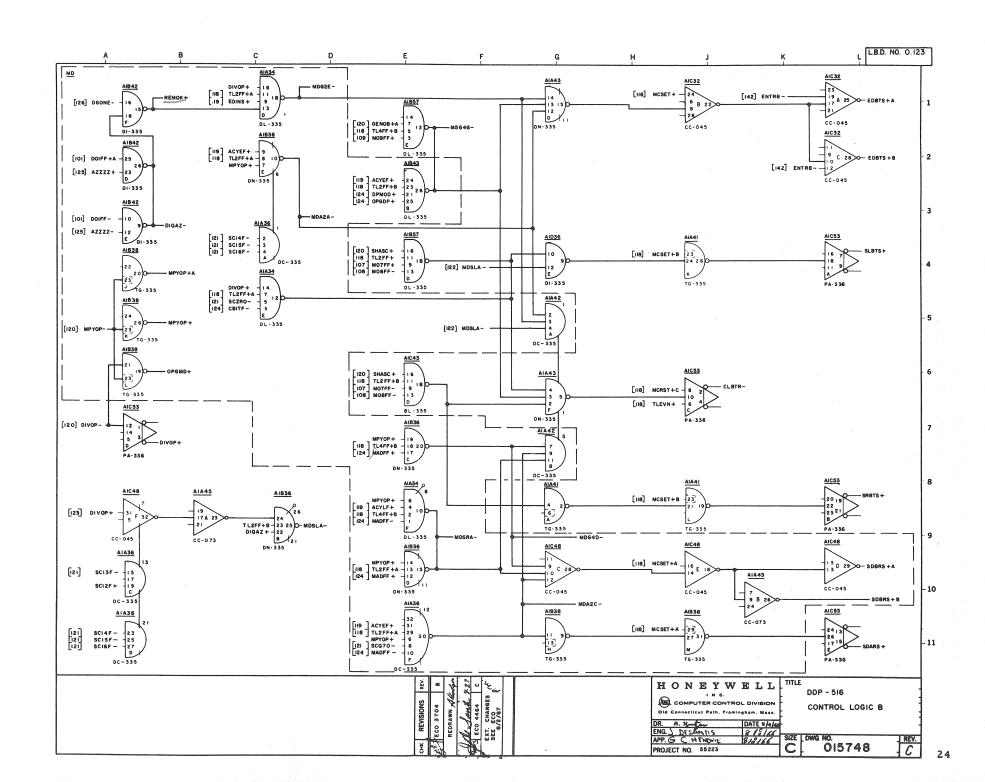


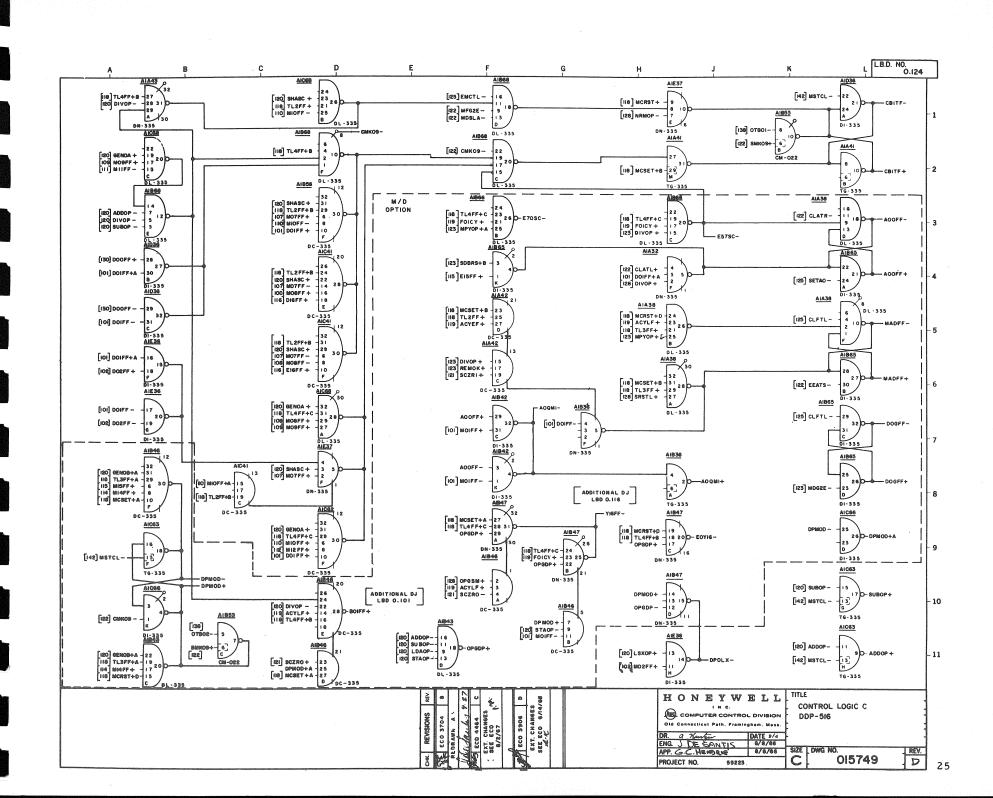


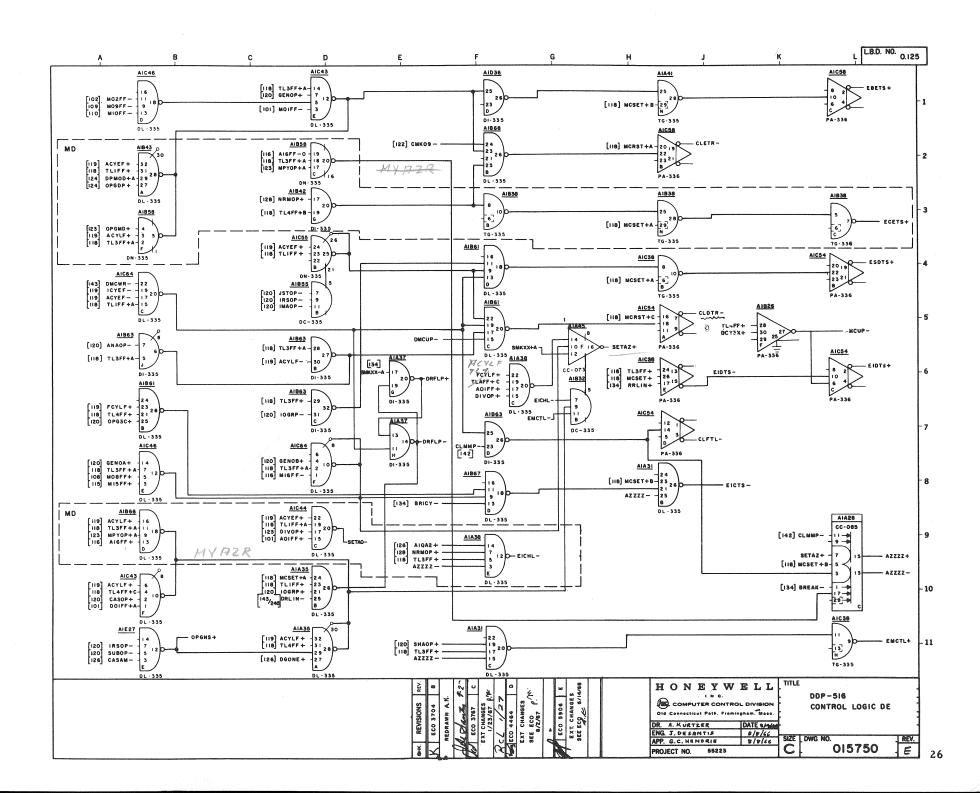


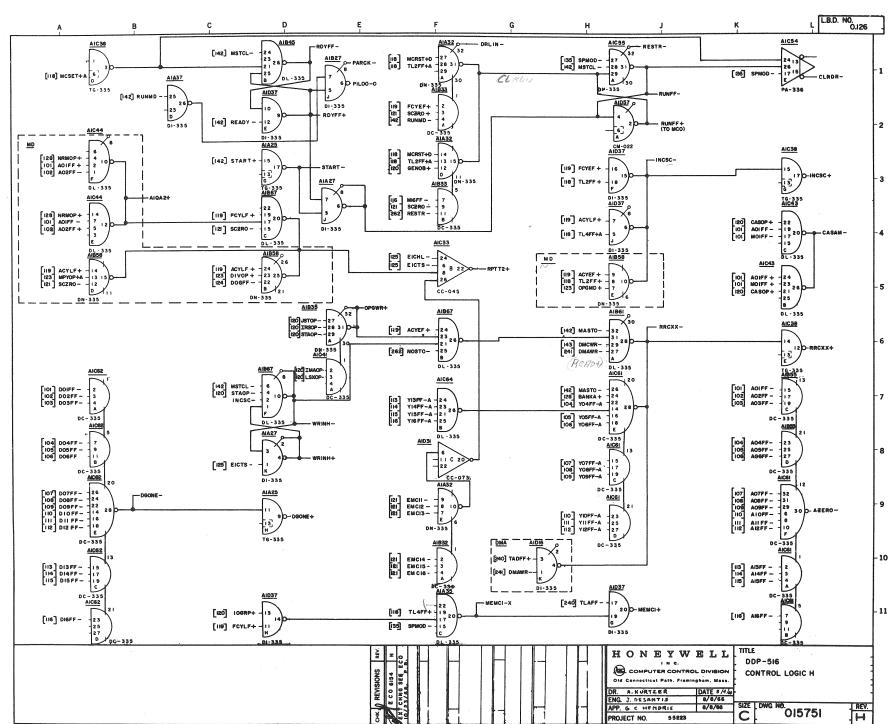


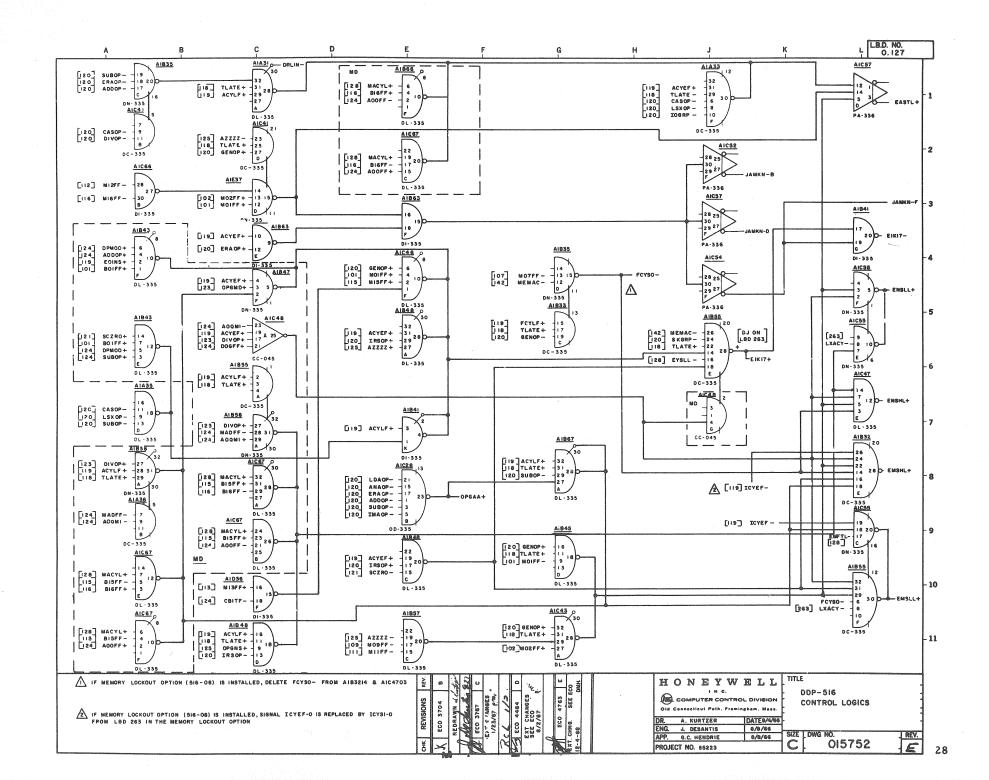


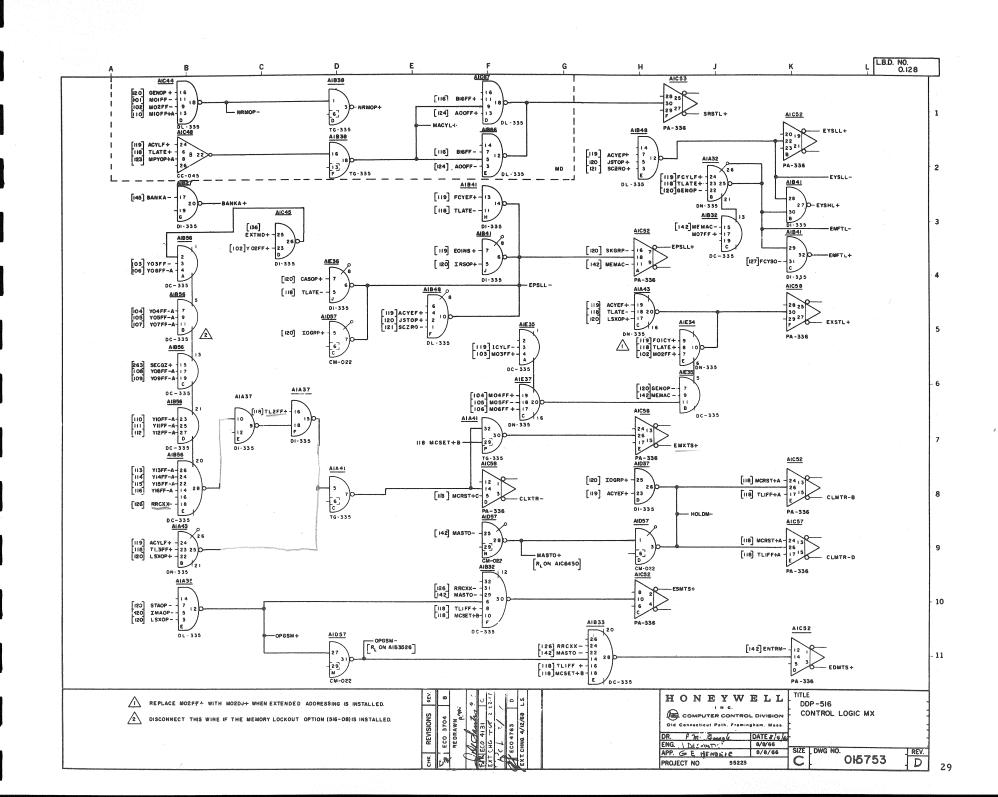


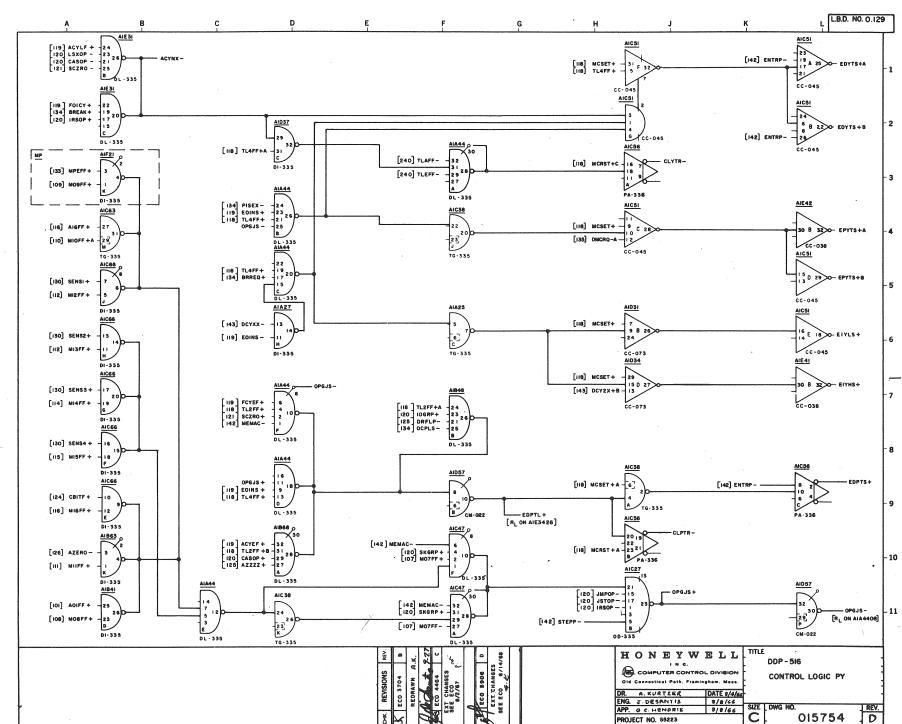




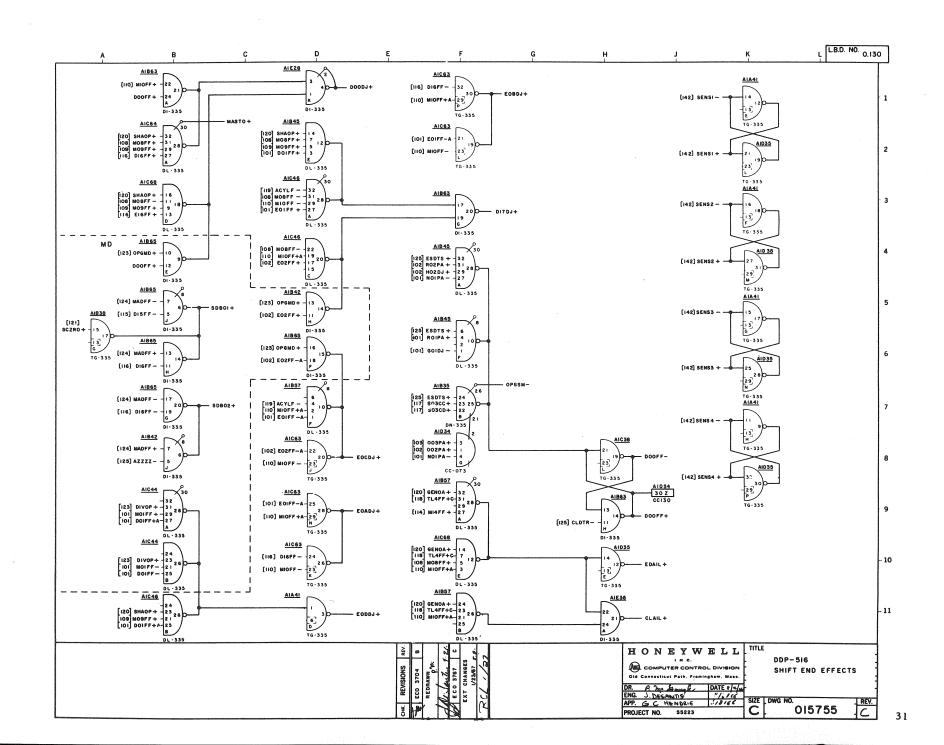


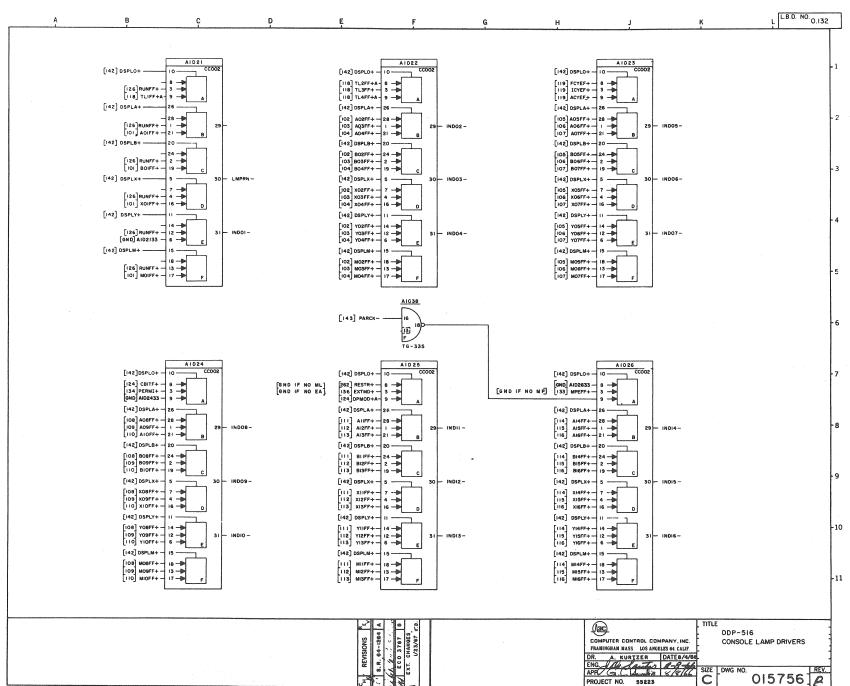


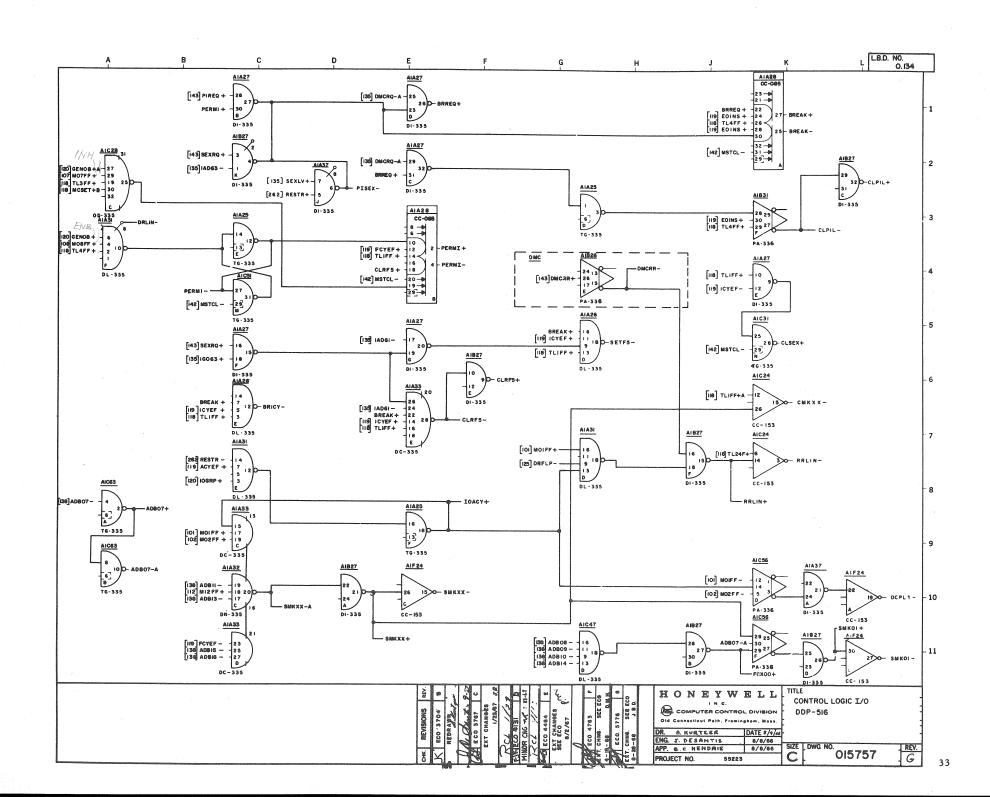


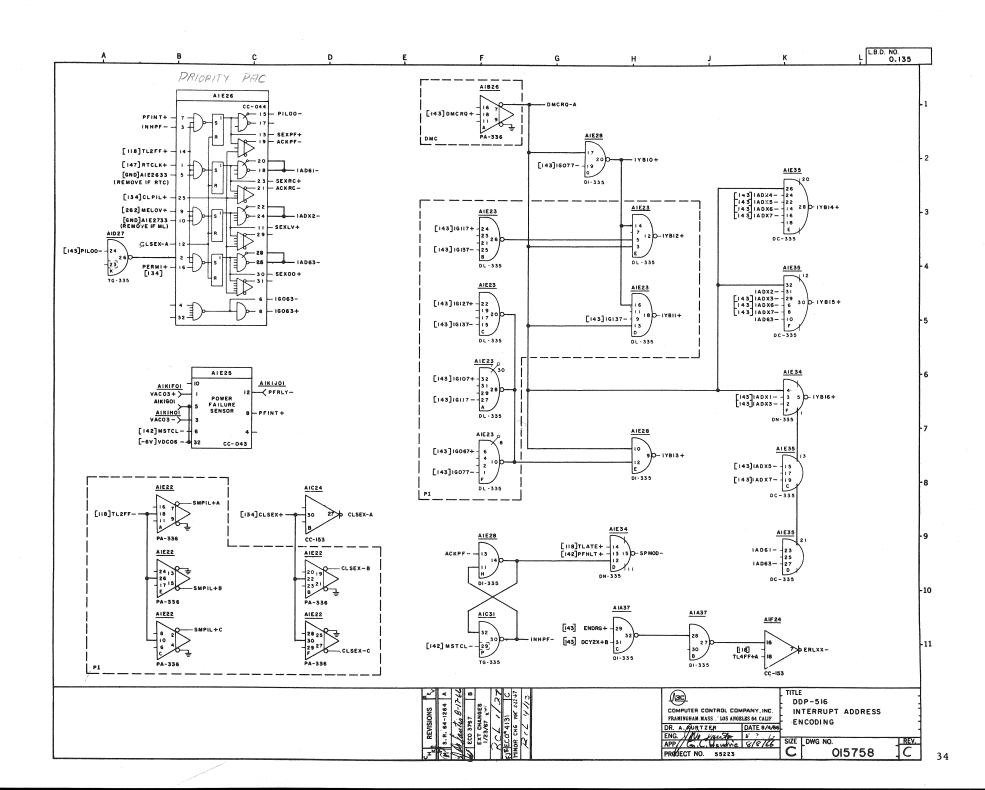


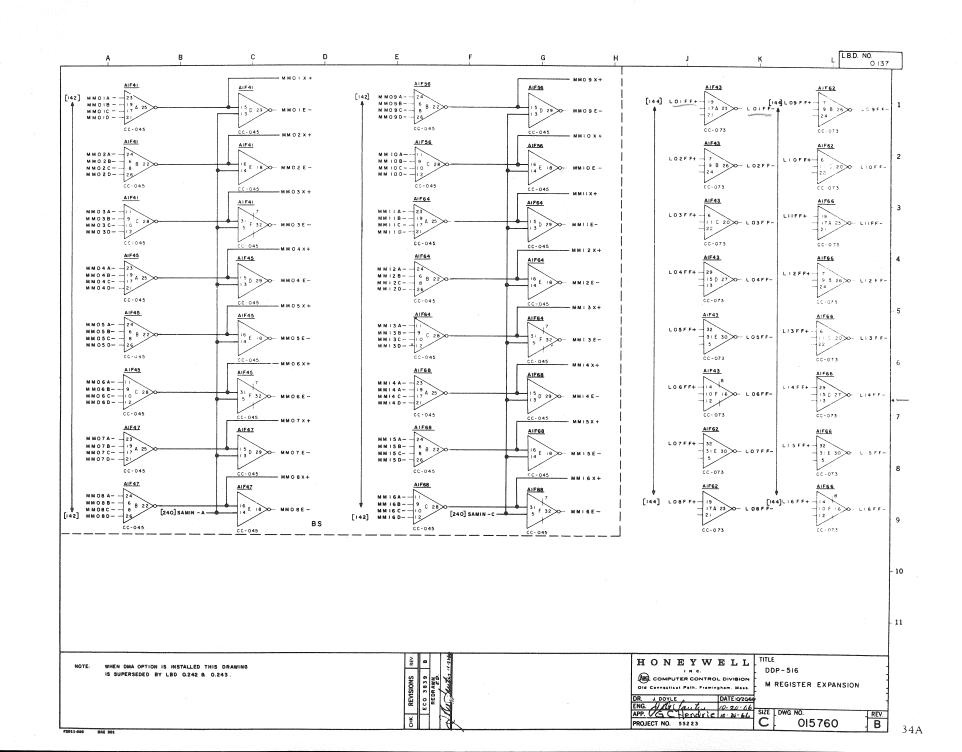
2.0

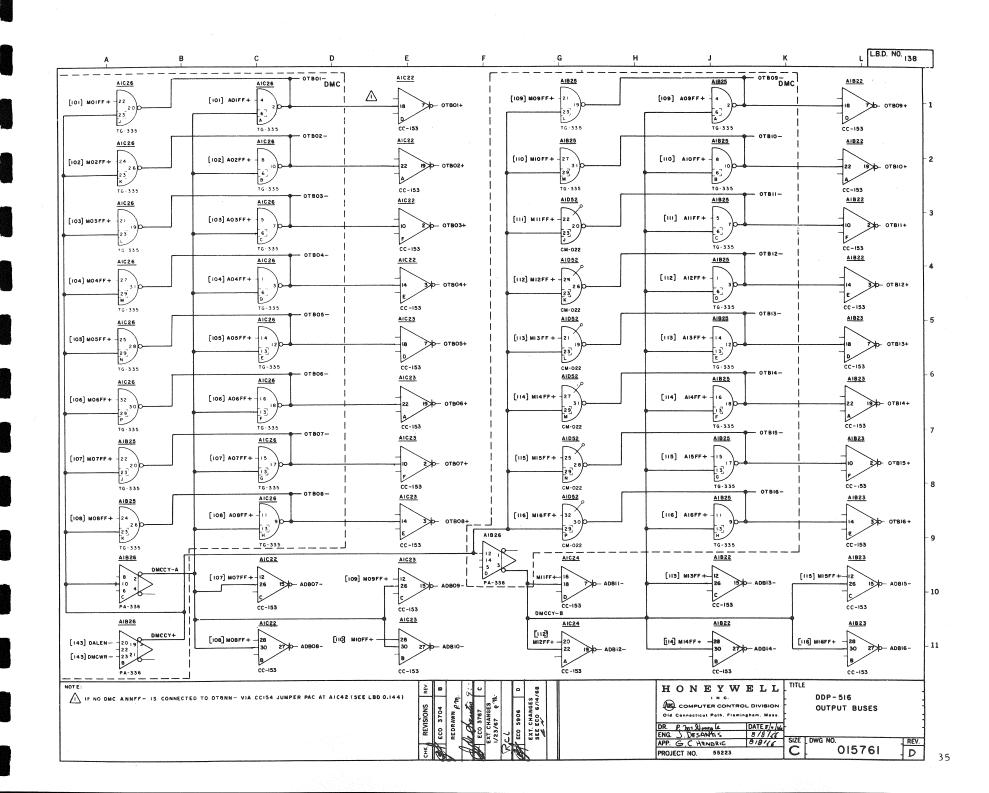




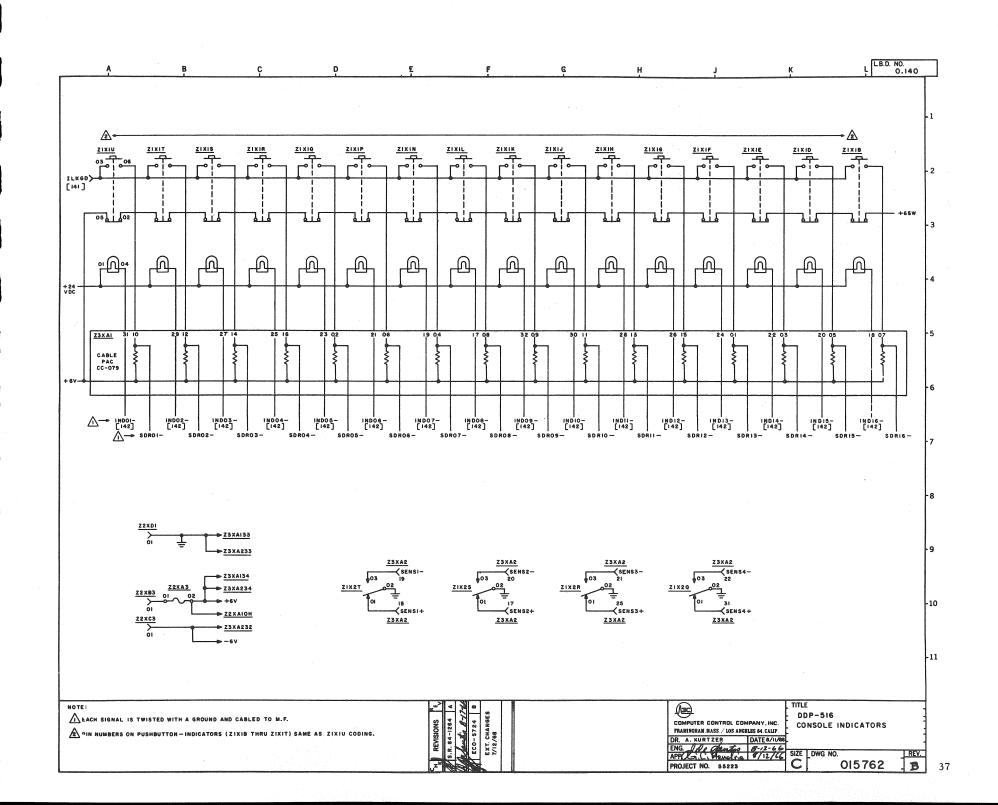


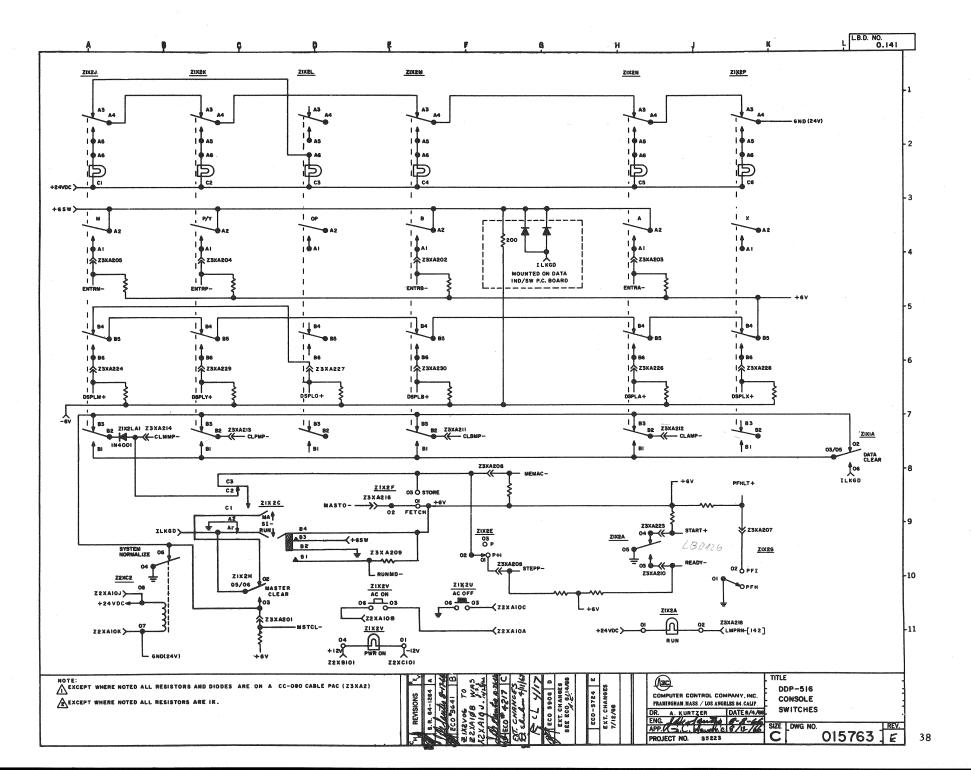




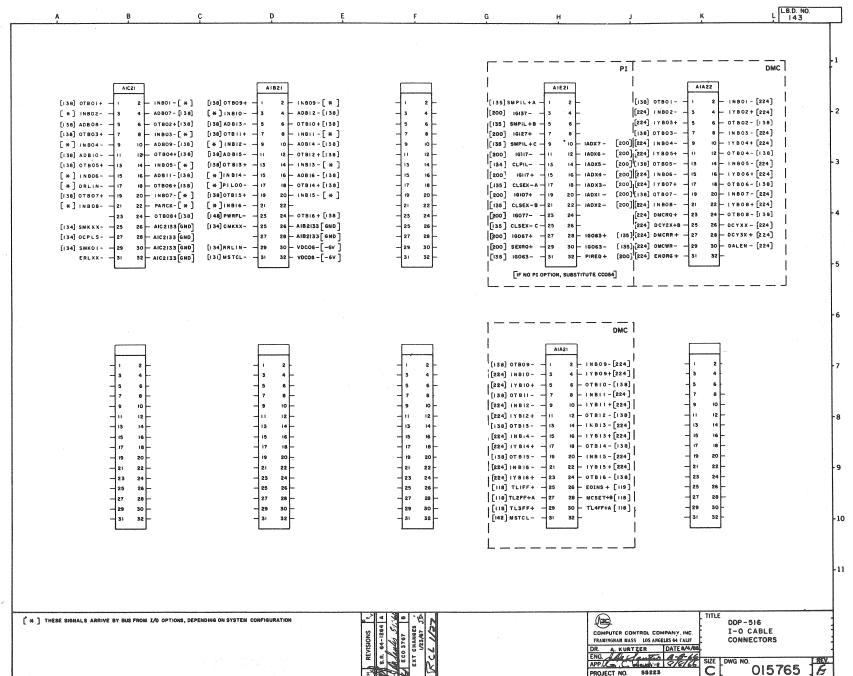


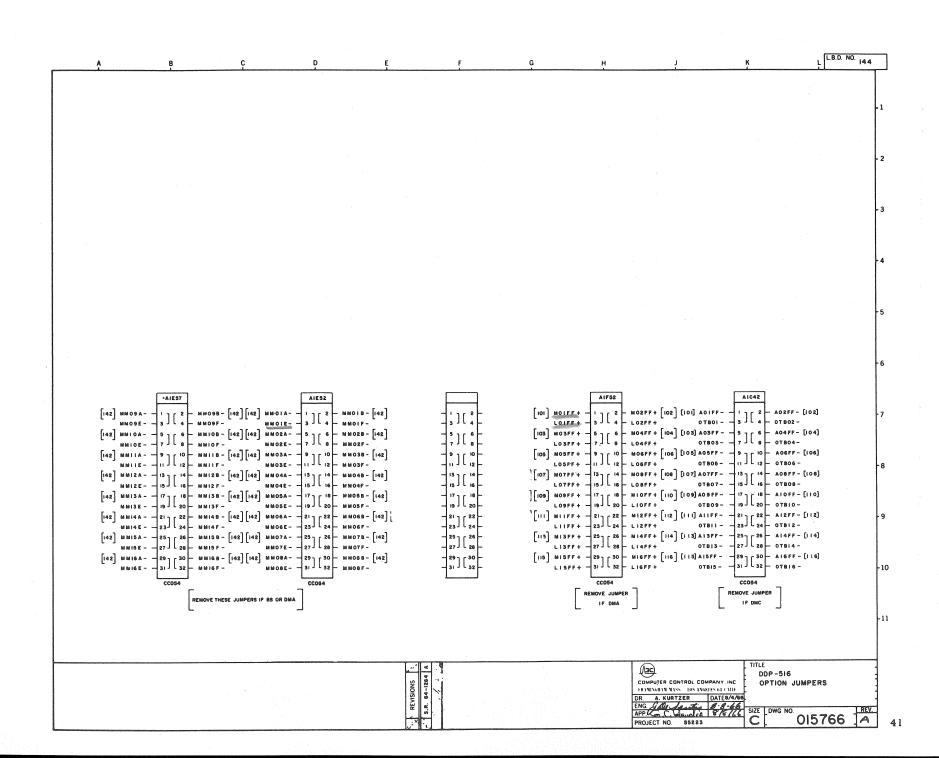
	A B	ç	D		E F	G	. h i	K L LB.D. NO.
TL4	MEMCI [<u>10GRP</u>] EICTS (-1ST-FIRS+INA+CAS+LDK] EICTS (+PDFLCA+STA+ADD+SUB) ETOSC (MPV) CLPTR, EDOTS [EVI-MP] CLYTR, EDOTS [EVI-MP] CLYTR, ETOTS [EVI-MP] CL	SETP! [MOB] (EFFECTIVE AT MEXT TL!) CLATR, EGATS, CLBTR, EDBTS [MOS] CLETR, EGATS [MI] CLATR, EGATS [MI] CLATR, EGATS [MI] CLATR, EGATS [MI]	CLAL [MICHAIG] EDAL [MOB-MICHAIG] CLATR [MICHAIG HIS SHIE] EDANS [MICHAIG HIGS HIG] ETANS [MICHAIG HIG] CLACE [MICHAIG HIGS HIGS] SETCE [MICHAIG HIGS] CLACE [MICHAIG HIGS] CLACE [MICHAIGH HIGS] CLACE [MICHAIGH HIGS] CLATR. EPYTS [BRREQ]	CLYTR, EDPTS [SKCON] CLYTR, EPYTS [SKCON-BRREG]	CLYTR, EPYTS [BRREG]	MENCI CLPTR, EDPTS [EDT-JMP] CLYTR, EDYTS [EDT-BREG] CLYTR, EDYTS [ETVES-TRE-BREAK] STYIG [EGT-DPWODILDA+ADD+SUB]]	MEMCI C. ATR. EDMS. EDM. 3 [LDM. 4M. 44 EDM. 4D 6 - 8 UB] SETRE [LOS FOR 14 CAS. 14 UB] SETRE [LOS FOR 14 CAS. 14 UB] SETVIE [LOM 45 TA + 10 TA 9 UB] SETVIE [STA] INCSC	MEMCI CLATR.EDANS [DA-MAM-ERA-MOD-SUB-] EDALS EDALS [MEMT-SAID-DIN-E. CLATR.SIANS [MA-MD] CLATR.SIANS [MA-MD] CLATR.SIANS [MA-MD] CLATR.SIANS [MA-MD] SETTE [DO-MODIADO-SUB-DIN] SETTE [DAT-DINADO-SUB-DIN] SETTE [ALS-DO-MOSAL WINDOOM-LINE-DO-MOS] ^M CLATR.EDATS [SAT-HRS] CLATR.EDATS [SAT-HRS] CLATR.EDATS [SAT-HRS] CLATR.EDATS [SAT-HRS] CLATR.EDATS [SAT-HRS] CLATR.EDATS [SAT-HRS]
TL3 (AND TLATE+)	במוני	EASTI, EMSHL, EMSHL, ENSLL, ENSLL CLEPT [MOT] STRST [MOT-MOG] CLETR, EBETS [MOS+MO] ECUT, SETAR [MS-MOT (MATAZ)] ECUTS, SETAR [MS-MOT MATAZ] ROYTZ [SCERO (MRMOS+AL=A2]]	EASTL, JAMKIN [ĀĒ (MIZ+ MIG)] EASTL, EMSIL, EMSIL [ĀĒ + MIZ- WIG] EMSIL, EMSIL, EMSIL [ĀĒ + MIZ- WIG] EMT [MIS (WIĞ + G)] RETTS [ĀĒ + MOG - MIG] RPTTE [ĀĒ - Ē - Ē - Ē - Ē - Ē - Ē - Ē - Ē - Ē -	EPSLL, EIKI7	EASTI, ERISHI, EMSHI, EMSLI, EMSHI, ERISLI, EMSHI, EBITS EMCTI, CLIKOS, SETAR [ĀĒ] RPTTR [ŞCZRO]	ENSHL, ENSTL CLDTR, ESDTS	EAST [MON-SER-FERA-CAS-HOV+] SSRT. [WAY(86 # 917)] SSRT. [WAY(86 # 917)] EAST. [WAY(86 # 917)] EAST. [LIMA-HON-HOV-85/806-807] EAST. [LIMA-FES-VANGOLOO, MAN EAST. [LIMA-FES-VANGOLOO, MAN EAST. [LIMA-FES-VANGOLOO, MAN EAST. [SUR-HON-FES-REX-HAPT-DOVE/887]] EAST. [LIMA-FES-VAN - 185 ** MAN CLOPR [AM] EASTS CLETR. EBST'S [LIMA-FON] CLAMD [MAY] STRAE [MAY-AN] CLAMD [MAY] STRAE [MAY-AN] RPTTZ [MAY PON-500]	ETSHL_[ADO-SUB-FERA-CLS-ON-AMPY(BIG # BIT]] SISTL [MAY(BIG * BIT)] EPSL_[BIS+1DGR2] ETSHL_ETSL_[ELSH [ADD-SUB-AMAY-BIS[BIG * BIT] + DN-BIX [ADD-BIN] ETSHL_ETSL_[ENSL_BIT] FOR CLOSE (ADD-BIN) ETSHL [BIS * LOG BIN] ETSHL_ETSL_ETSHL [ADS-BILE BIT] FOR CLOSE (ADD-BIN) ETSHL_ETSL [ENSL BIN AMAY [ESL] ETSHL_ETSHL [ENSL BIN AMAY [ESL] ETSHL [ESSH BIN BIN AMAY [ESL] ETSHL [ESSH BIN BIN BIN AMAY [ESL] ETSHL [ESSH BIN BIN BIN AMAY [ESL] ETSHL [ESSH BIN
TL2	CLPTR, EDDYS (SCERO - NEMAR) CLYTR, EMYYS (RRC(Y-LO)) INCSC (SCERO) CLRUM (SCERO - RUNNO)	CLATR, SLATS, CLBTR, SLBTS [SCERO, MIG] CLRUM [SCERO, MIG]	CLATR, EDANS, EDALS [\$GERO]		CLATR, SANTS, CLRCB [SCERG) - NOT] CLATR, SLATS [SCERG) - NOT] CLBTR, SLBTS [SCERG) - NOT - NOTB CLBTR, SABTS [SCERG) - NOT - NOTB CLRCB [SCERG) - NOT - NOTB SCERG [SCERG) - NOTB SCERG [SCERG) - NOTB SCERG [SCERG NOTB		CLYTR, EBYTS [FAS. A2] ** CLYTR, EBYTS [FREC (1/0)] CLATR, EBYTS, STYMAD [DPWOOLLDA+] CLATR, STOOS [STA-ADD-SUB] CLATR, SBOTS [STO-STO-STO] CLATR, SBOTS [STO-STO]	ENST. [ADO+SUB+ERA-CLS+DNV+MPY(BIG # BIT)] SIRST.[MPY(BIG * BIT)] ENST.[MPY(BIG * BIT)] SIRST.[MPY(BIG * BIT)] SIRST.[MPY(BIT)] SIRST.[MPY(BIT)] SIRST.[MPY(BIT)] SIRST.[MPY(BIT)] SIRST.[MPY(BIT)] SIRST.[MPY(MPY(BIT)]] SIRST.[MPY(MPY(MPY(BIT)]]] SIRST.[MPY(MPY(MPY(BIT)]]] SIRST.[MPY(MPY(MPY(MPY(MPY(MPY(MPY(MPY(MPY(MPY(
TLI (AND TLATE)	EPSLI, ENGT CLFTI, CLRSC, CLDTR, ESDTS CLRRE, CLMAD, CLDOG CLSEX RRC [BASTQ] CLMTR					ERSH, EMSL, EKIT * CLMTR 20—F [REAK-LAGBI-SEXRO-10003] 24—F [REAK-LAGBI-SEXRO-10003] ECTS [BREAK]	EAST. [LRY -CRS] ESST. [LRY * EPSL. [CAS +ST] * ESSE. [CAS -YO] * ERS. [CAS -YO] * ERS. [STA] CLMTR [FORF] ESNTS [RRC STATEM-LEX] ESNTS [RRC STATEM-LEX] CLOTR, ESOTS [FORR-AND-STR] * CLETR, ESSTS [OPMOOLDA+STAHADO+SUB] CLETR, ESSTS [OPMOOLDA+STAHADO+SUB] CLEEK	EAST [LIX CRS - TOSRP] EAST [LIX] EVET [LIX] EVET [CAS - TOSRP] EVET [CAS - TOSRP] EVET [CAS - TOSRP] FOR [STA-HARA-LEX - AST + INS] CAN FINE [STA-HARA-LEX - AST + INS] CAN FINE [STA-HARA-LEX] EVAN [CORP. FOR THE STA-HARA-LEX] CAN EVET FOR THE STA-HARA-LEX]
GENERAL CONDITIONS	FCV	GENOB MOI-1402	GENOA MOI: MOZ	SKGRP MOI-MOZ	SHAOP MO: 1402	ICY	<u>Qu</u> 83.55	Oct (I) U o
	H REPRESENTS "DON'T-CARE" ACTH	MC			PENSIONS E.	COMPUTER CONTROL COMPANY, INC. FRANTIGIAN BLASS / LOS MORLES 64 CALIF DR. A. K. y. x' y. c T DATE 1-(17/4) ENG. APPLICAT CONTROL COMPANY, INC. APPLICAT CONTROL C		

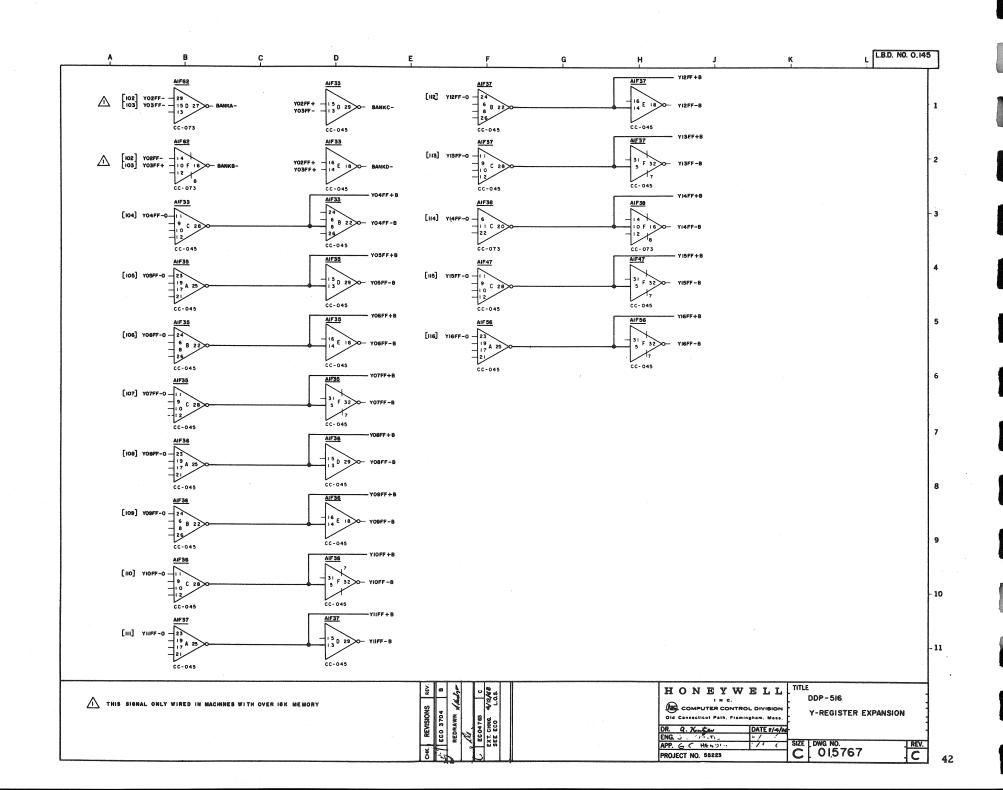


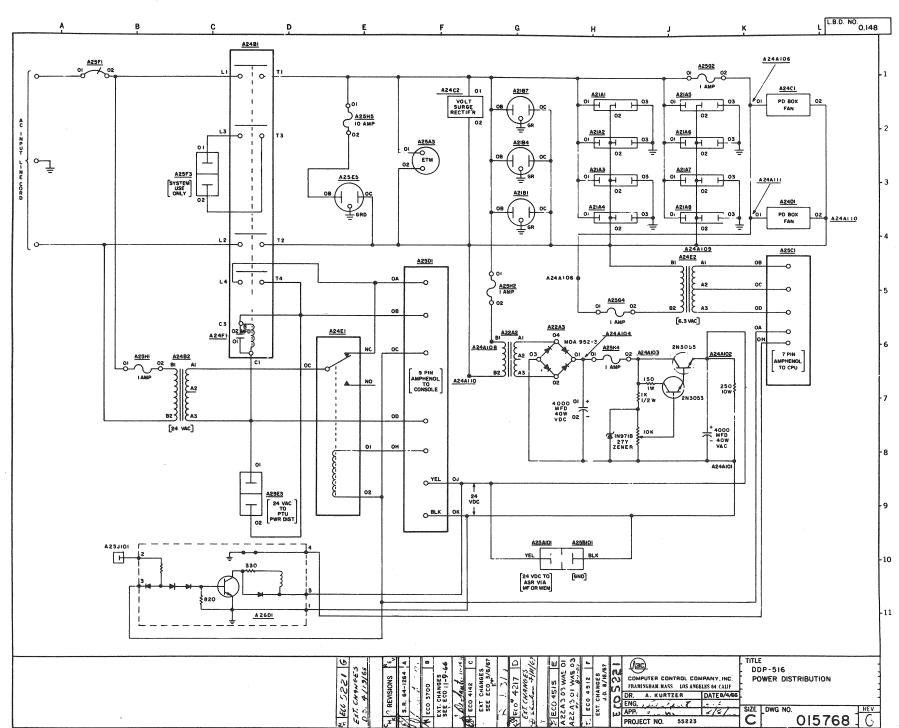


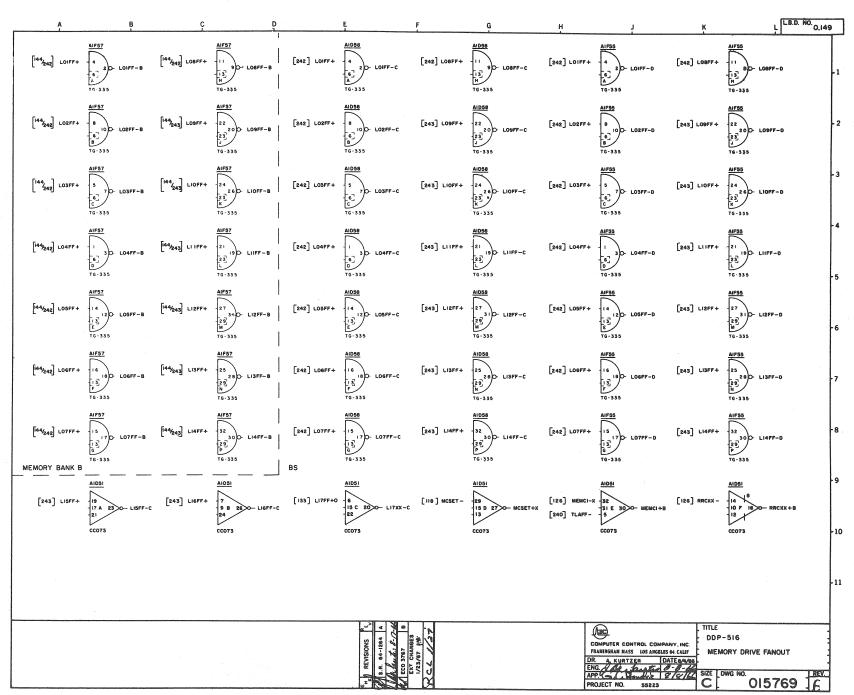


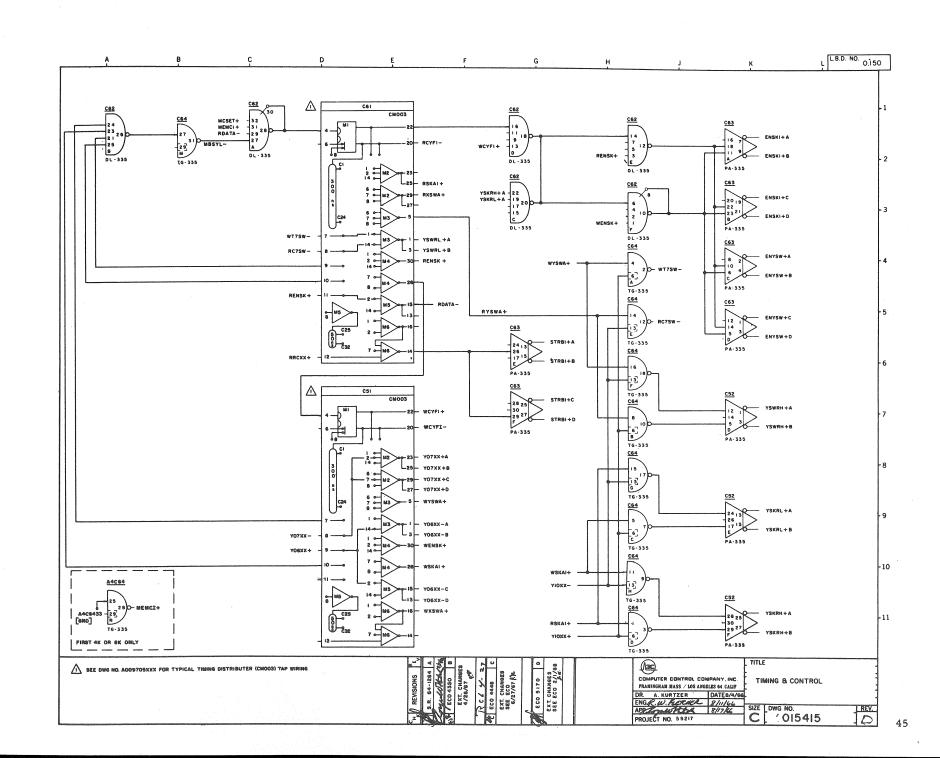


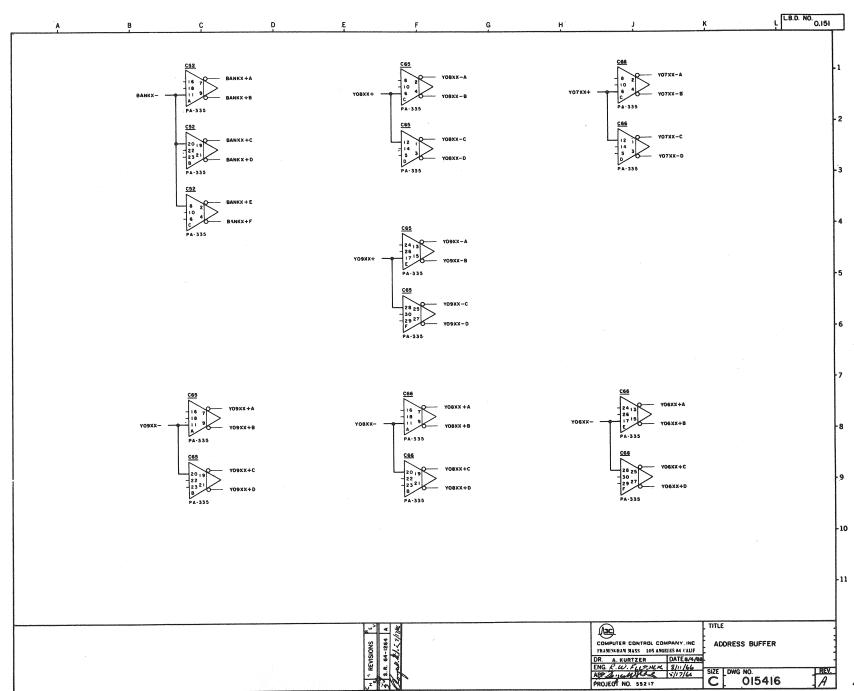


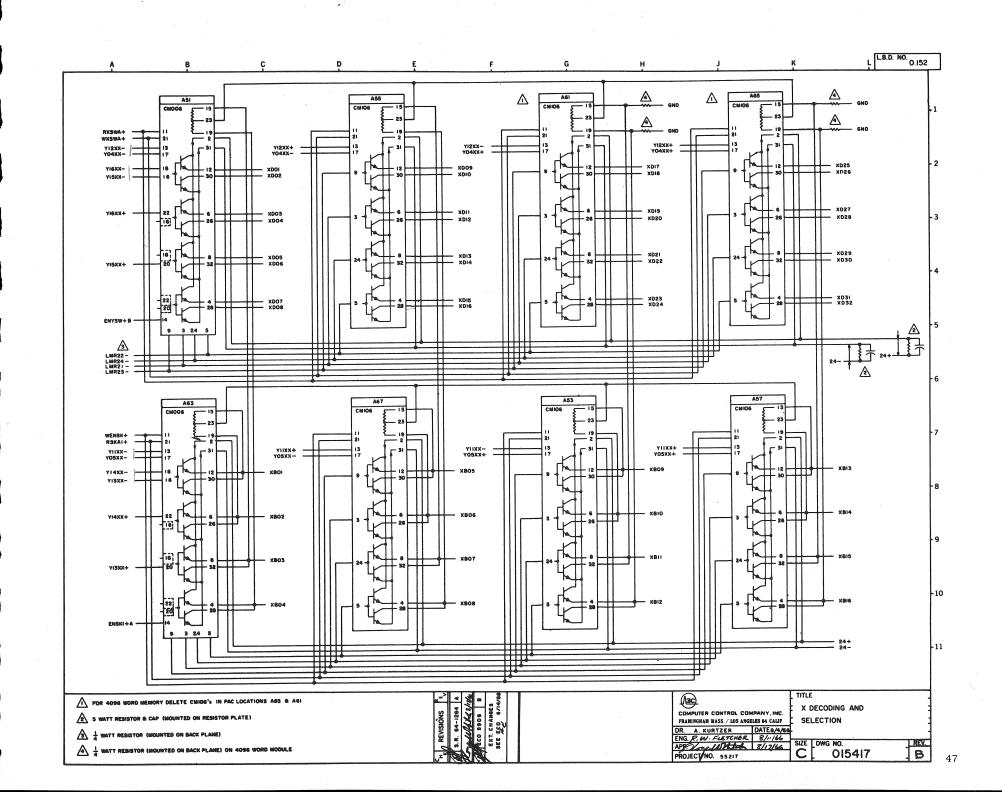


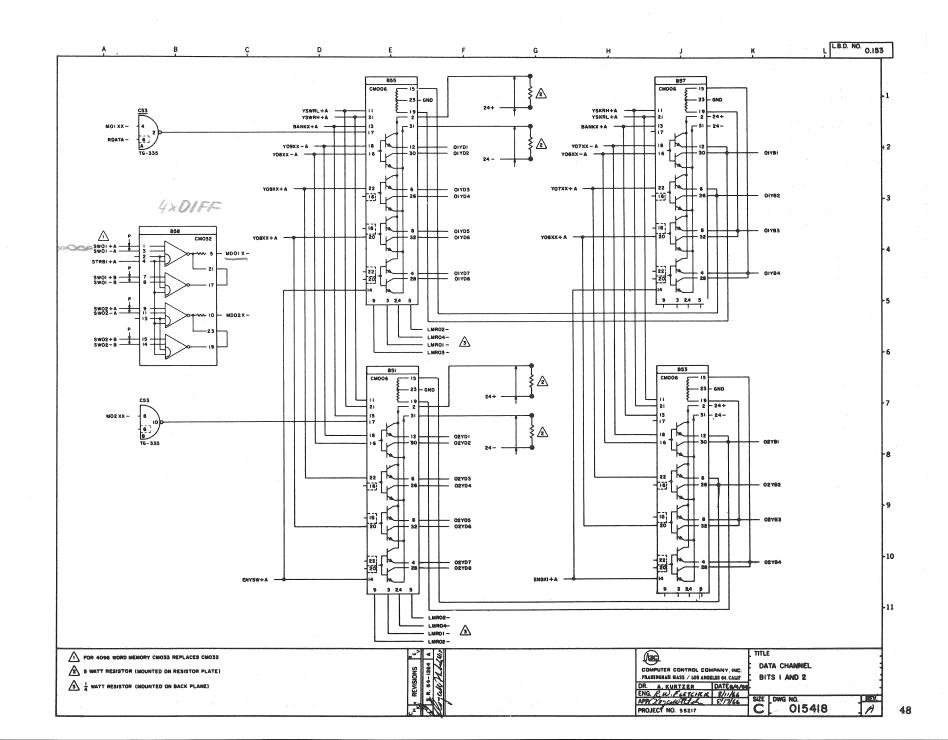


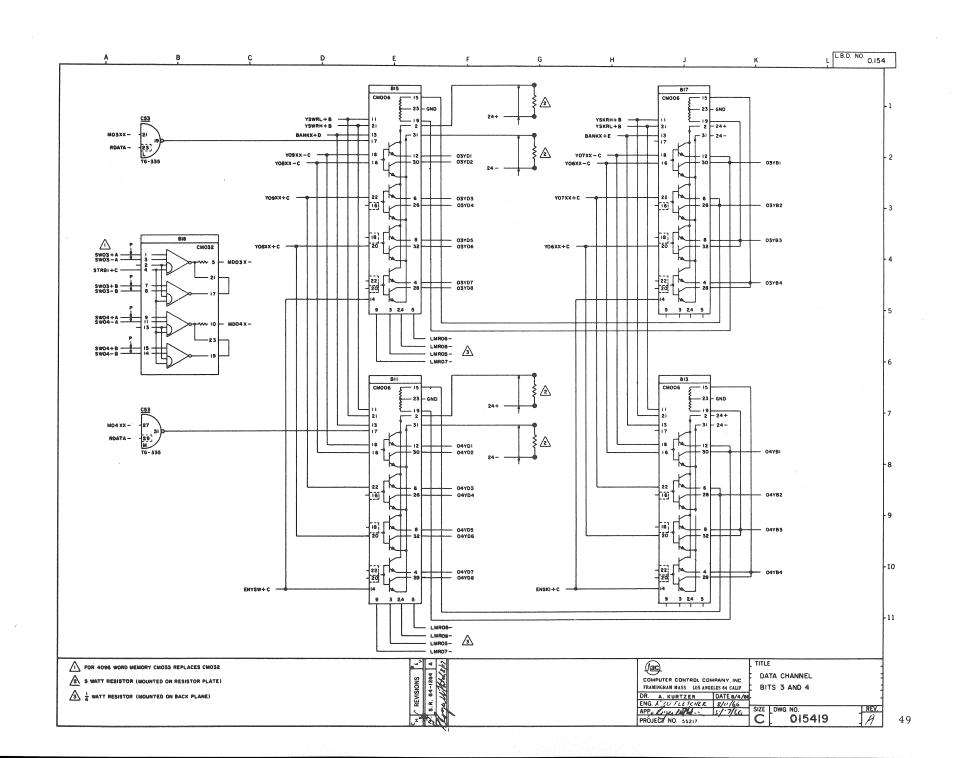


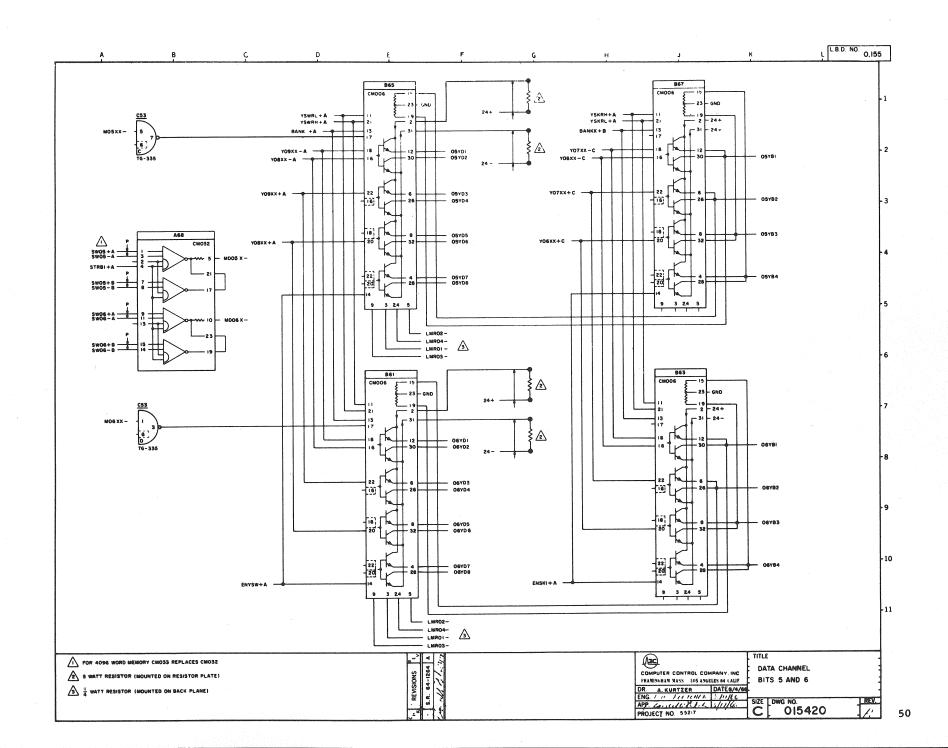


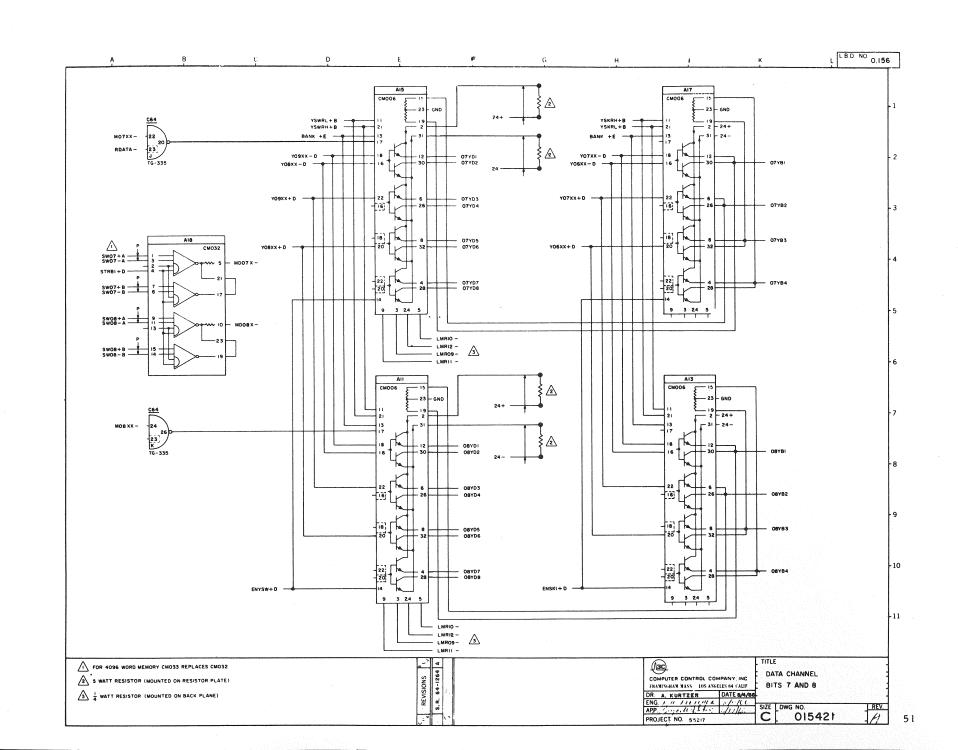


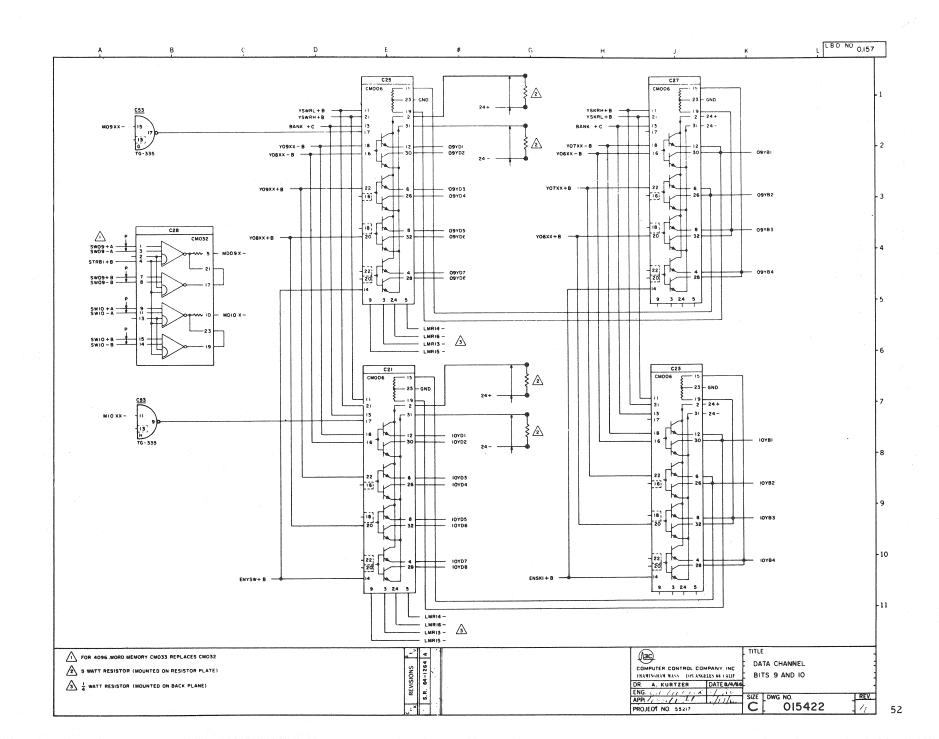


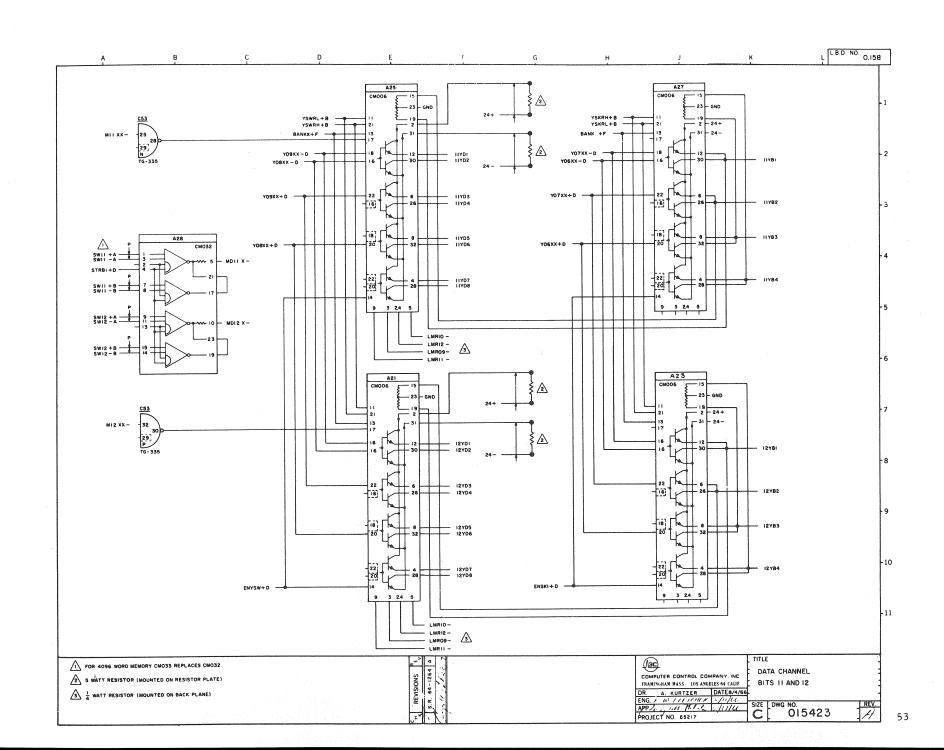


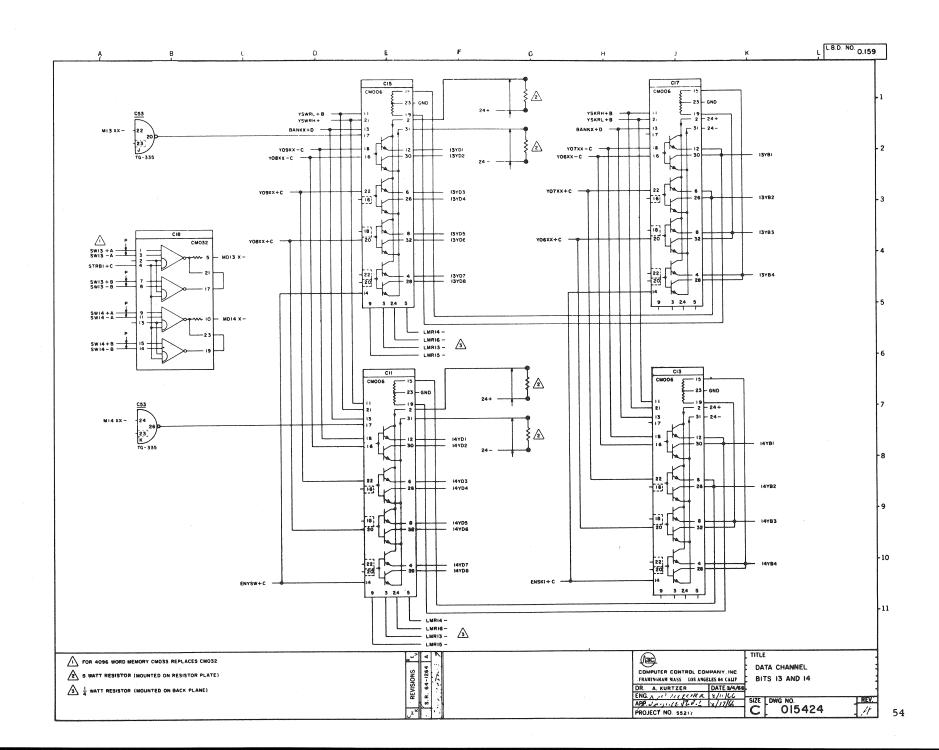


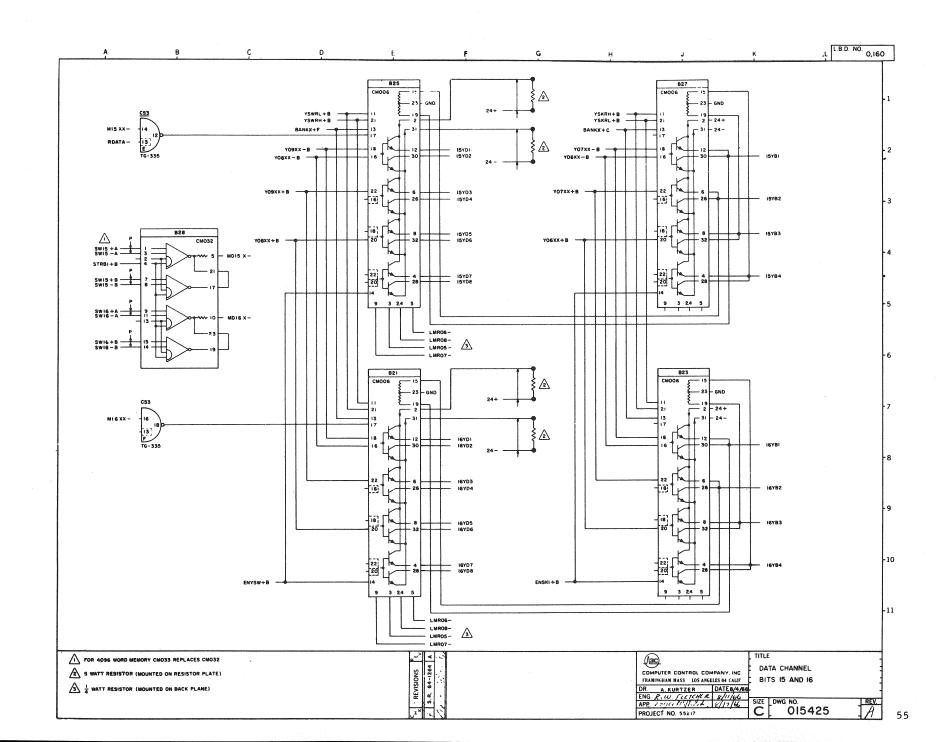


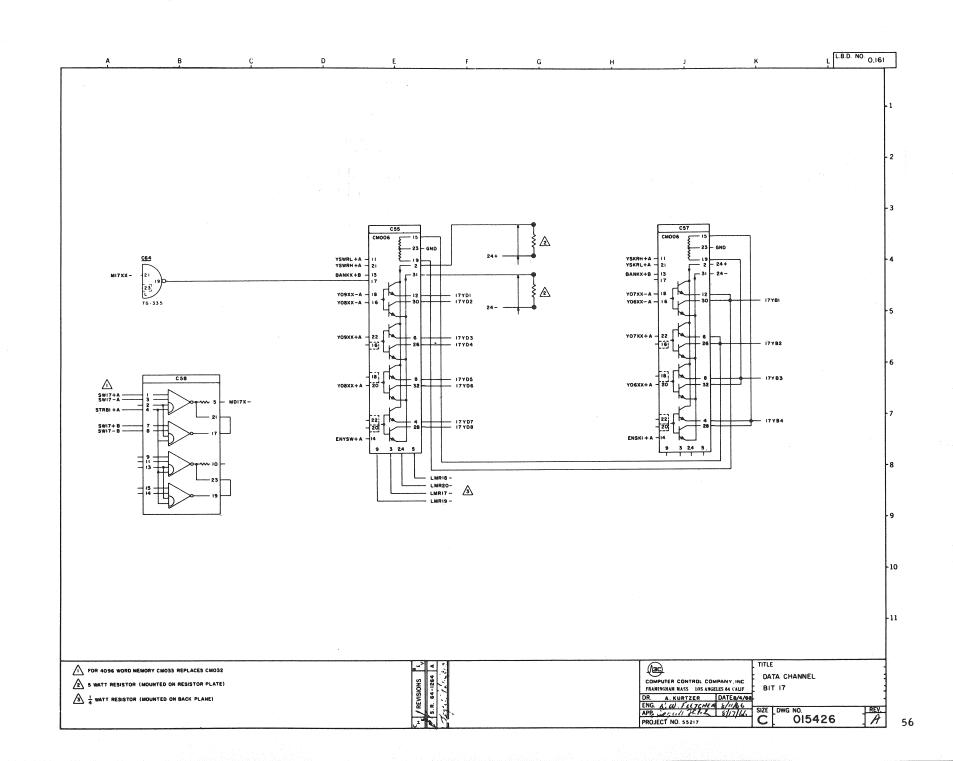


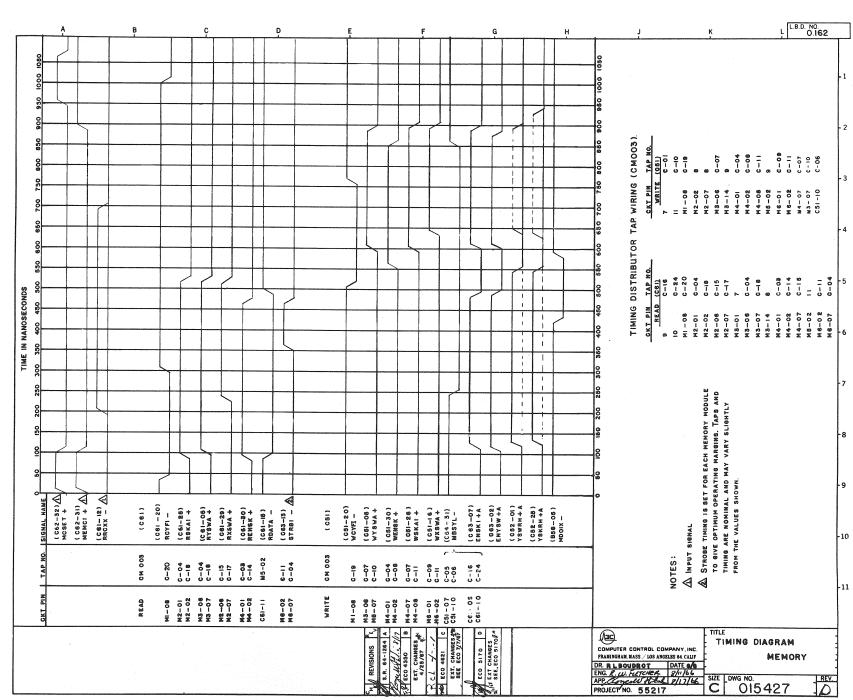


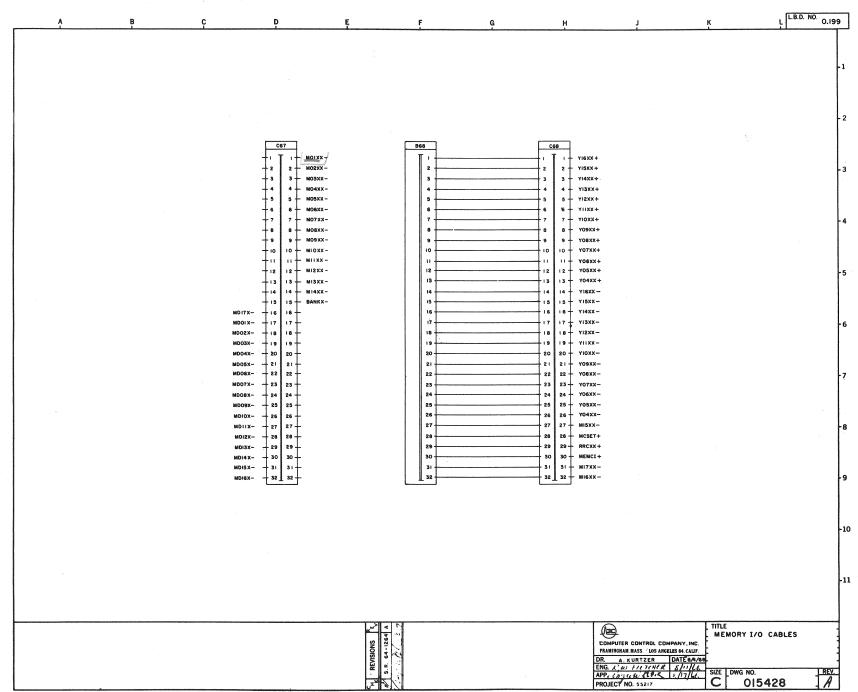


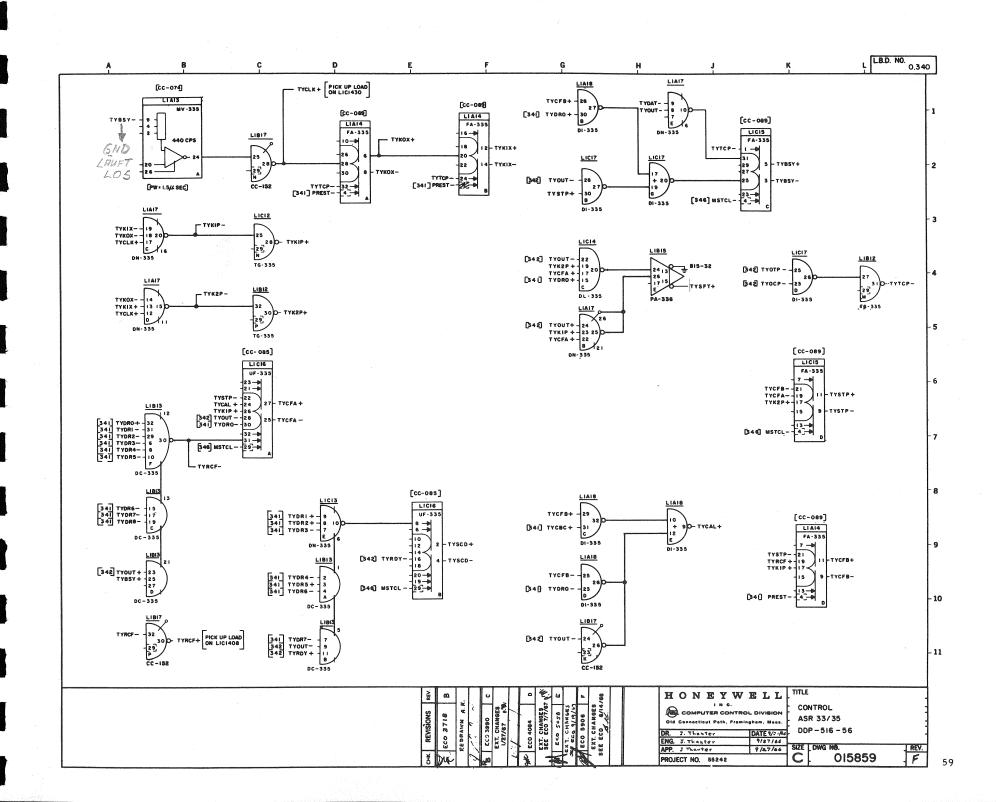


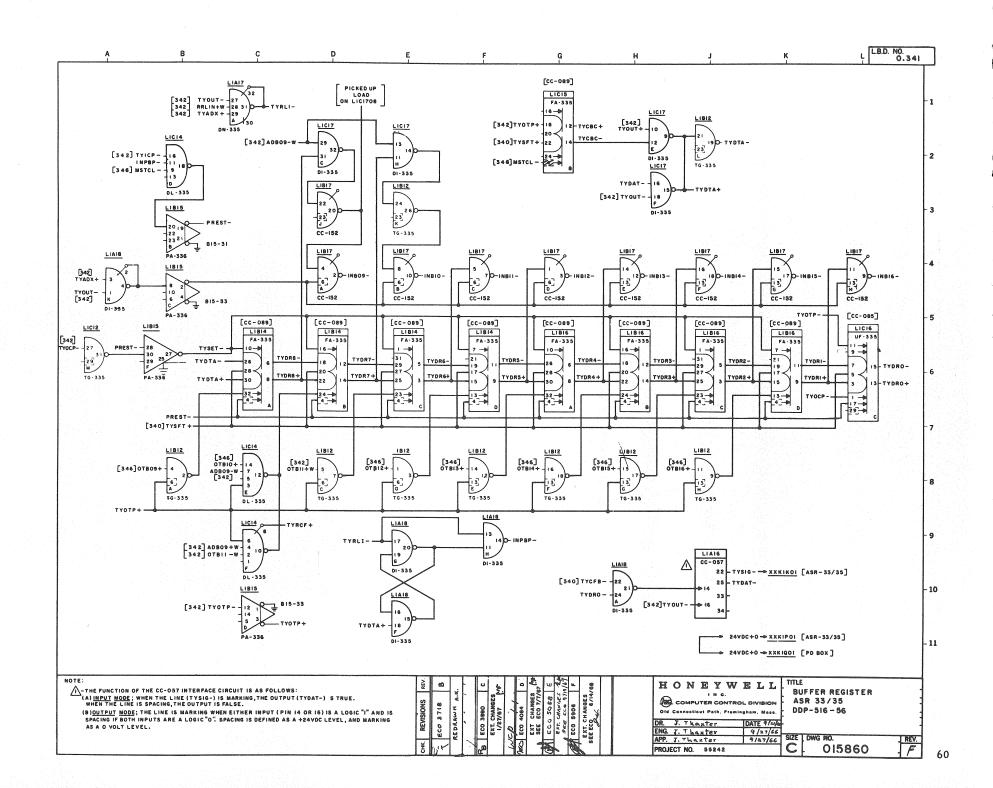


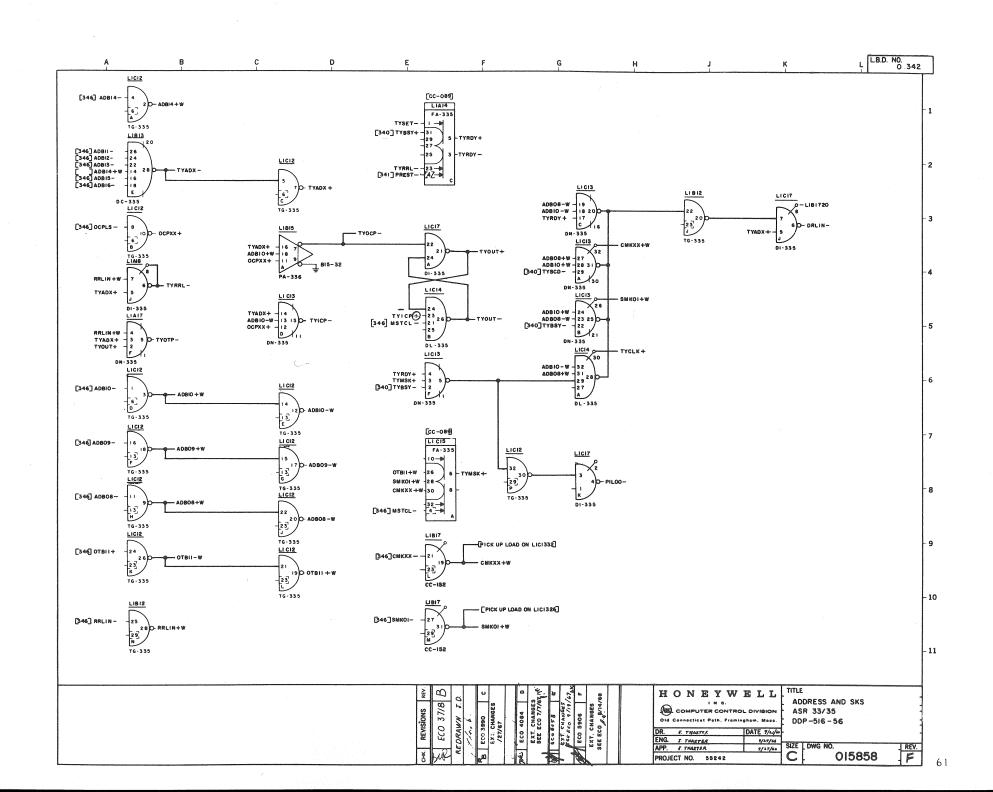


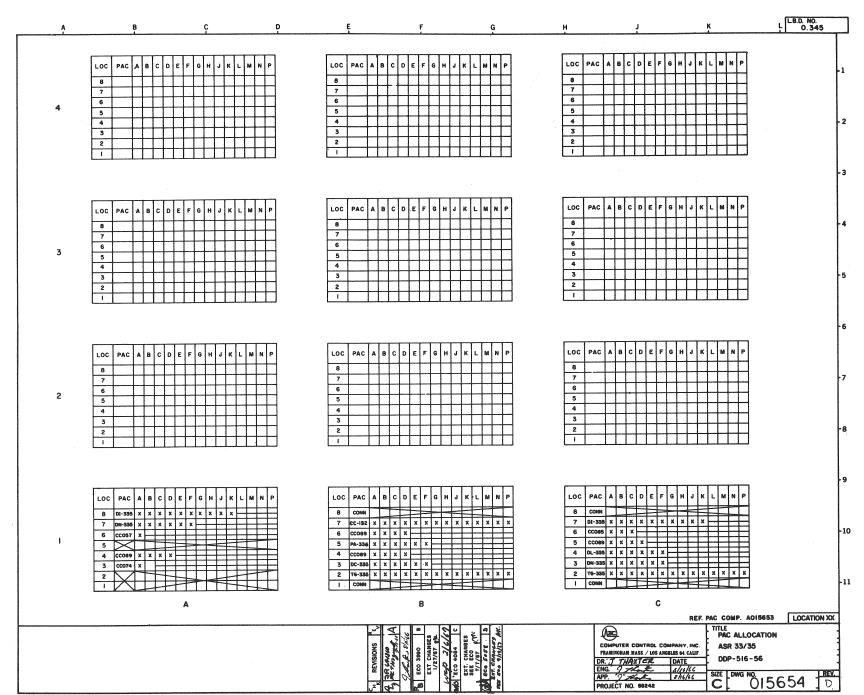


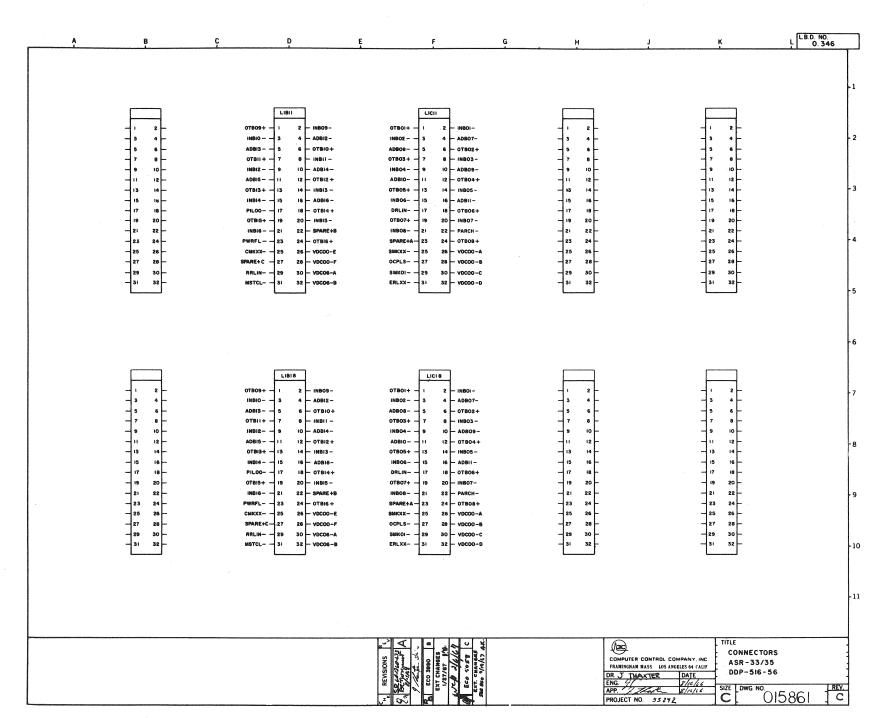


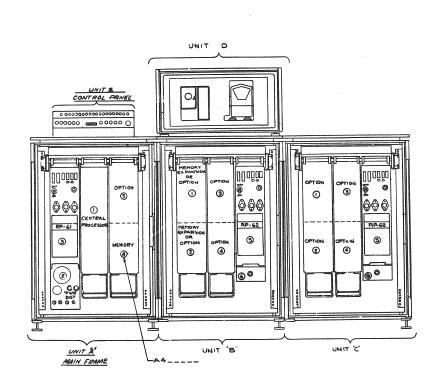










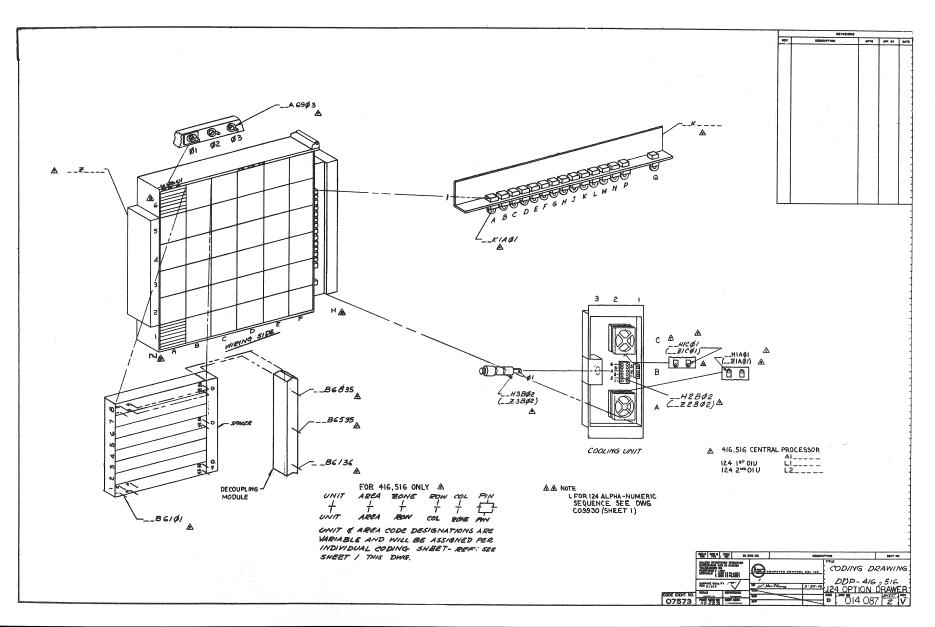


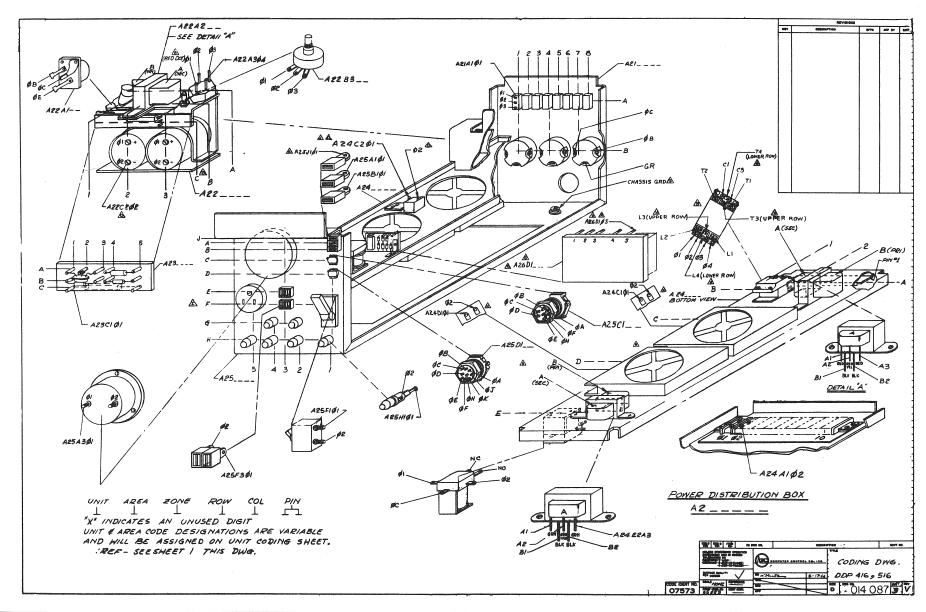
	REVISIONS			-	
REV.	DESCRIPTION	CFTG	APP BY	DATE	
С	PEDRAMNI JECO L-3467	БМ	B?	54	
D	ADDED VEIW), CONTRIBUISC AZACIÓN, E OZ OF SAF 3 PAR CECO 38 37 KONPORTOS INIVIDADOS		B	17	
Ε	EXTENSIVE CHG'S PER ECO 3643.	126	Ĩ.	1	
F	EXTENSIVE CHGS /ECO 3647. 8-1-Jame 10/14/4.	**************************************	87	1/3/4	
G	EXTENSIVE CHE'S/ECO	10-11	OB ,	1/2	
н	EXTENSIVE CHAS/ECO 3739.	1	Œ	1./_	
1	EXTENSIVE CHG'S/600 3862	12/5/64	3	Z/.	
J	EXTENSIVE CHGS/ECO 4052	1.00	Tort's	*	
K	ADD CIDES. TO SHEET 6/ ECO 4248 ARM 4-28-67	FJEGG	111	1/2	
L	ADDED DIXECCE, DELETED CE TOPVIEW SH. 8/ECO 4399 QMmm 5-4-67	1Bm	, Alle		
M	EXT CHG'S PER EGO 4328 APR 6/20/67	0.E 7/5-/47	: 2		
N.	EXT CHG'S PER ECO 4393 7-24-47-480	1/20/2			
P	EXT CHG'S SHT 2 PER ECO 4263 SOFT	1/2/60			
R	SHT 3 CODING A26DI WAS A24DI & A26DIOS WAS A24DIOS PER ECO 4403 58 ~19-49	96/2 1/2/47			
S	EXT CHG'S SHT 8 PER ECO 4645 FF.	1/2/27			
Т	EXT CHG'S SHT 2\$ B PER ECO 4468	ASF 10-9-07	معادة أورا	4/1/11	
V	CHG'D PIN LOC. 5HG. 7/ECO 5091	12 6-67	SH.	13/4/	
V	EXT. CHGS/ ECO 5222	7,0E 1/25/68	RM	2/2/10	

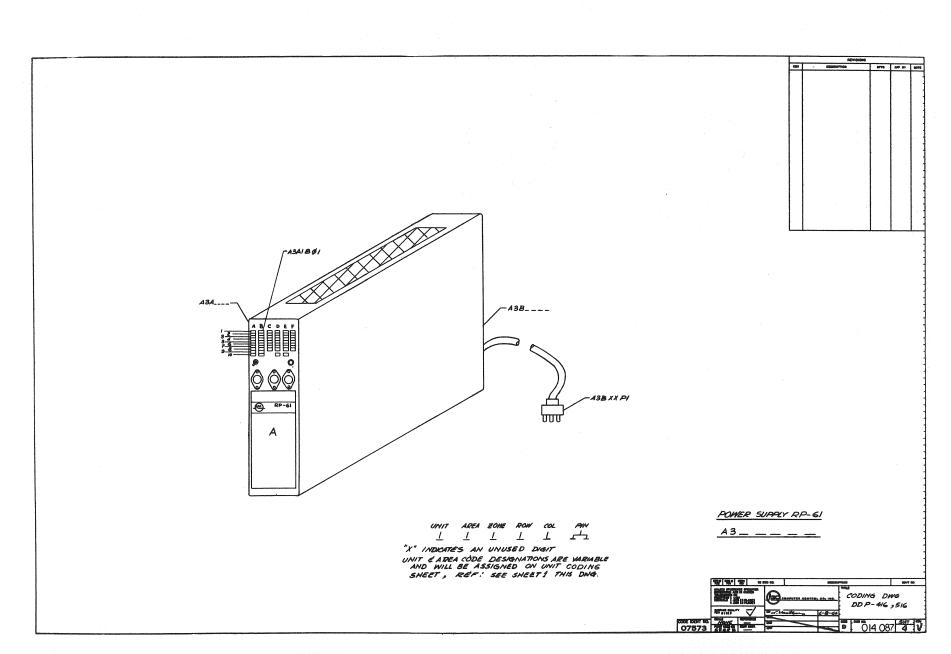
ALPHA SEQUENCE ABCDEFGHJKLMNPQRSTUVYZ NUMERICAL SEQUENCE Ø123456789 UNIT AREA ZONE ROW COL PIN
L L L L L L
X INDICATES AN UNUSED DIGIT.

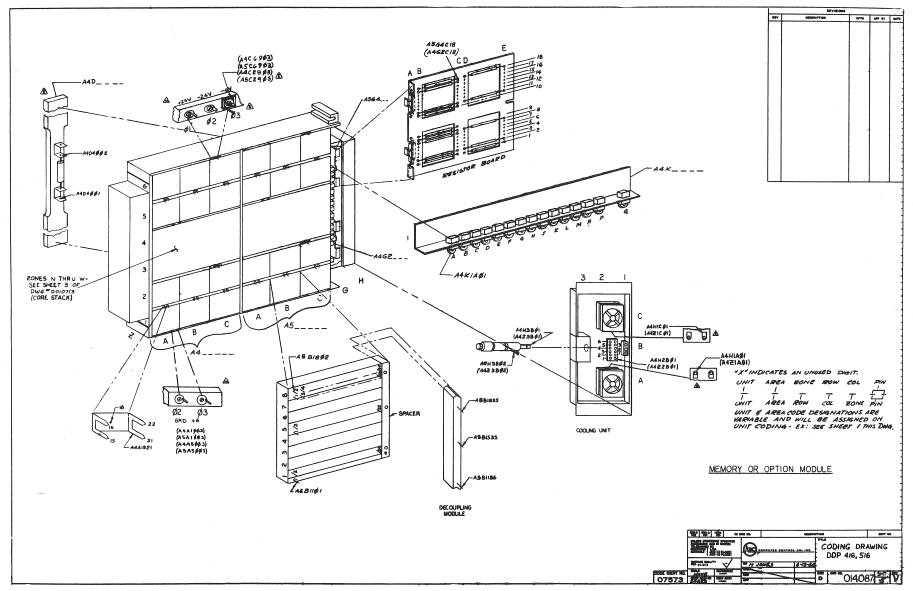
UNIT & AREA CODE DESIGNATIONS ARE VARIABLE AND WILL BE ASSIGNED PER INDIVIDUAL UNIT CODING SHEET

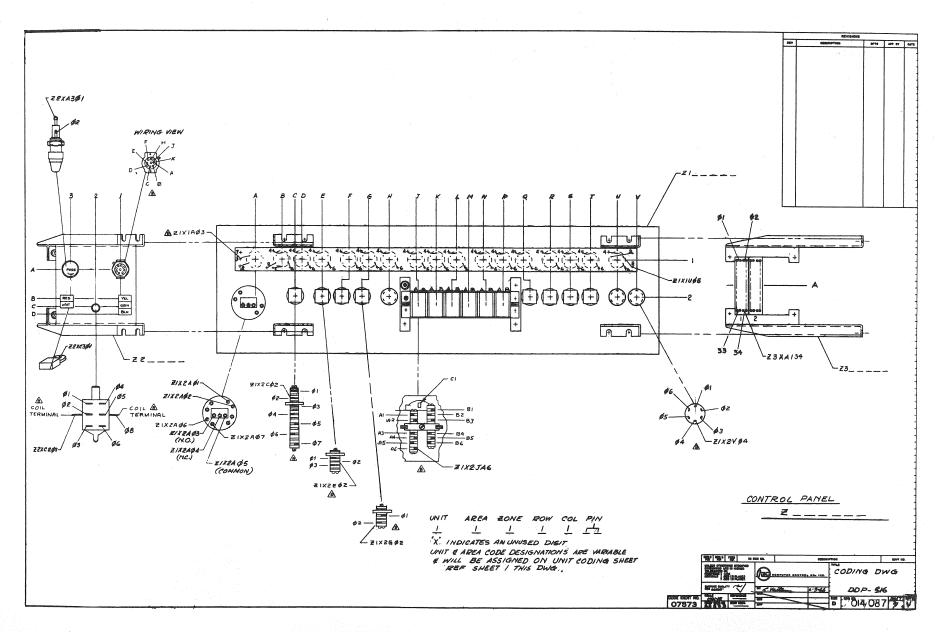
	<u>U</u>	NIT	CODI	NG	<				
	1	<u> </u>							,
		<u> </u>				SHEET	L OF	9	
	180 BO	電 2	DWG. NO.		Beschi			6077	40.
	TO STANCE OF	ON INCOME		EYW		CODI		_	
	SURFACE QUALI PER 61013		BEMON	met	12-11-44	00.	,	J, @	
07573	MONE I	EST AST	SE P. Sc.	BILIA	8-3-66 5-3-66 7-26-66	D C	140	87	Ÿ

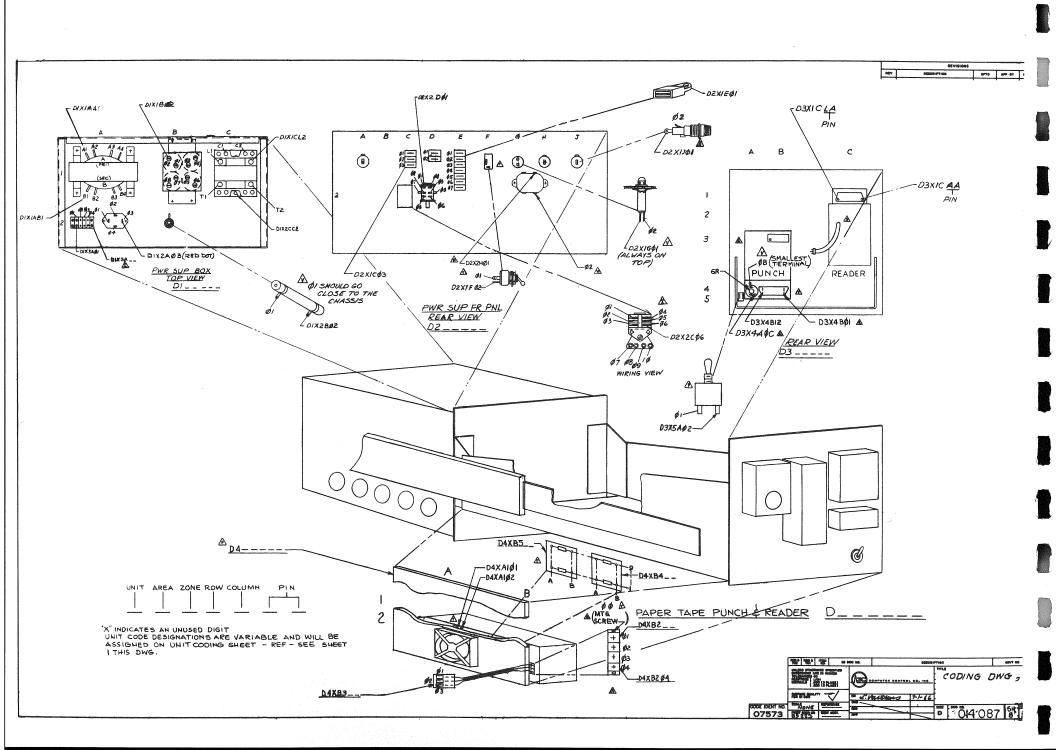


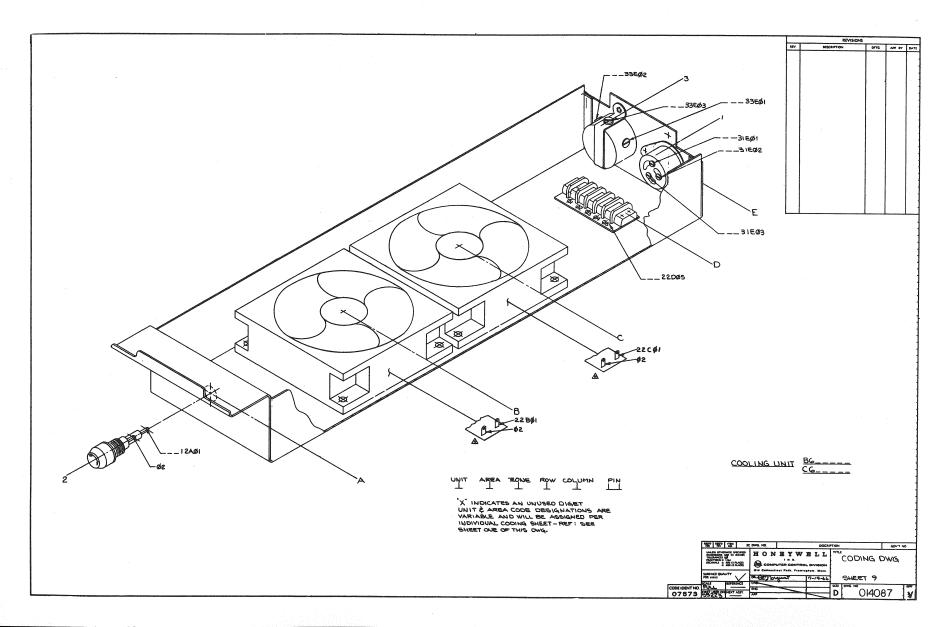


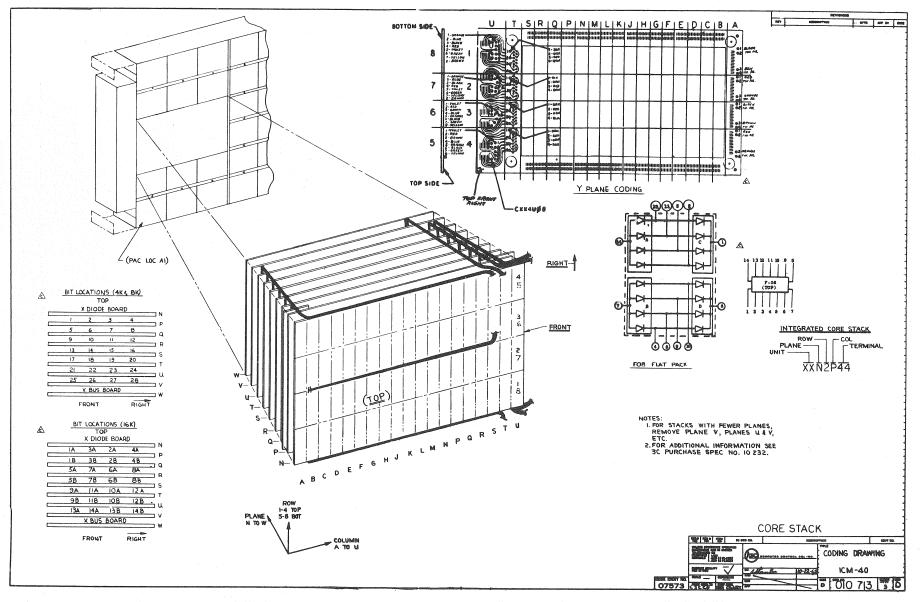


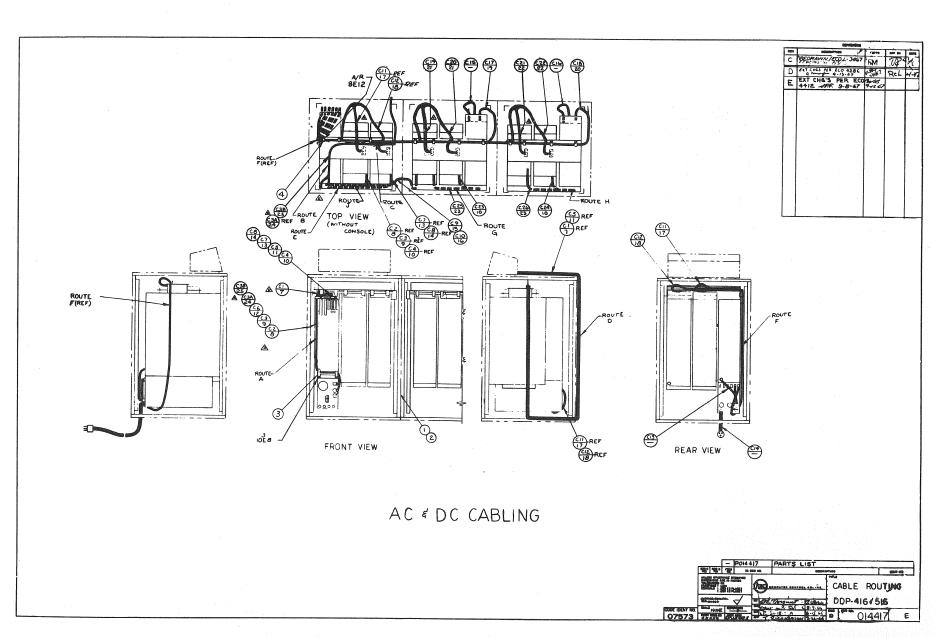


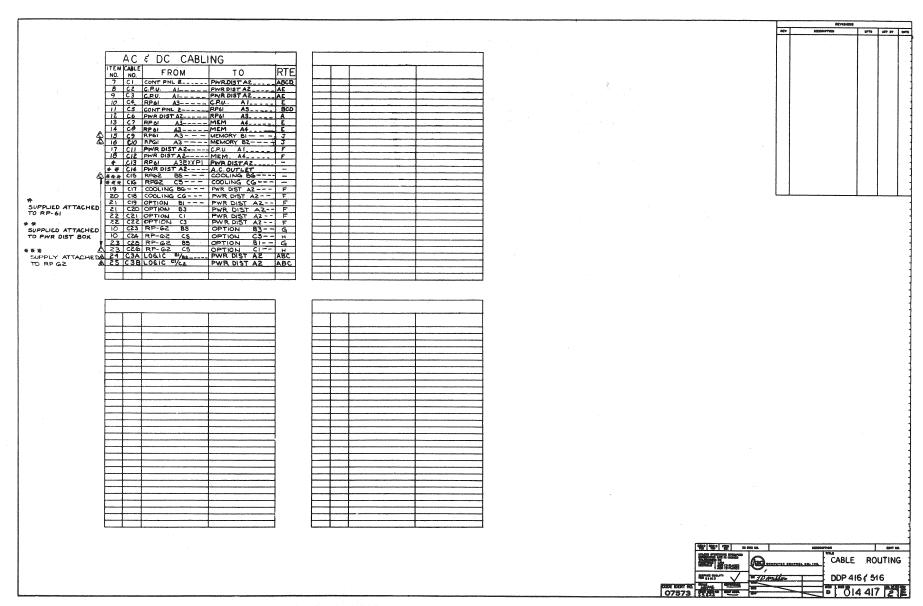


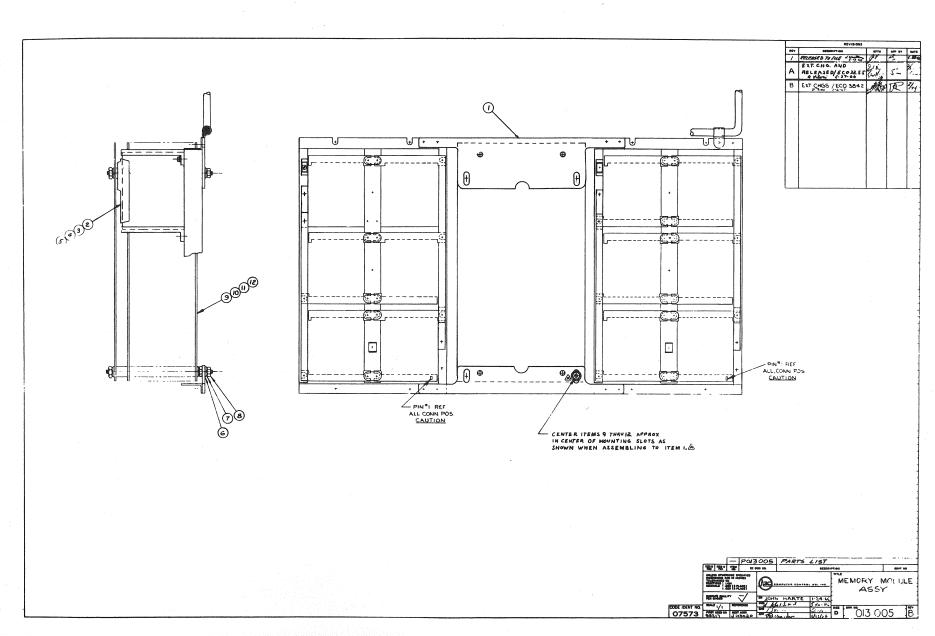


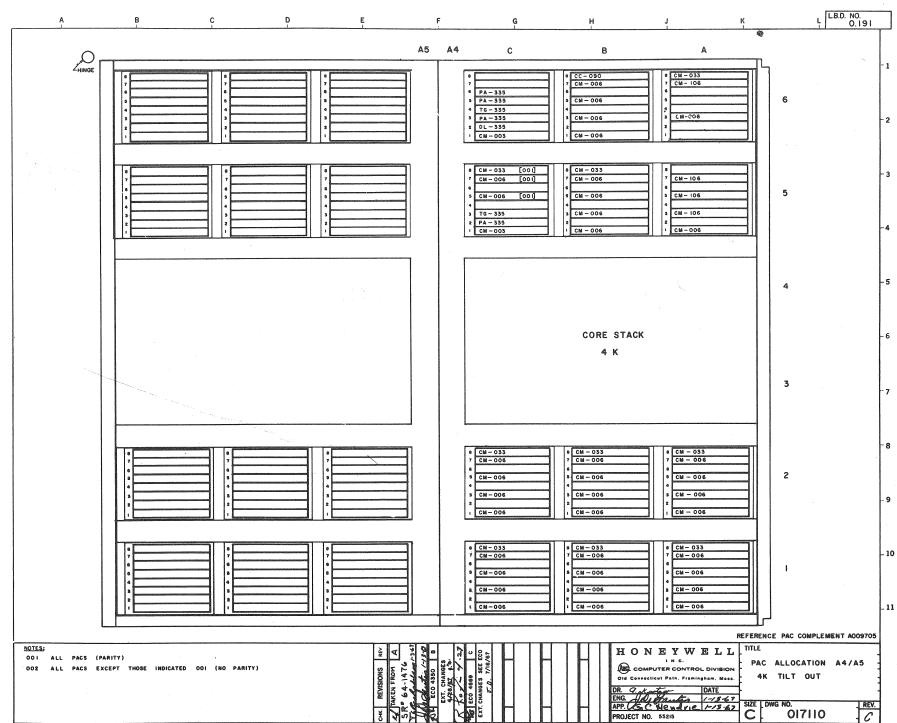


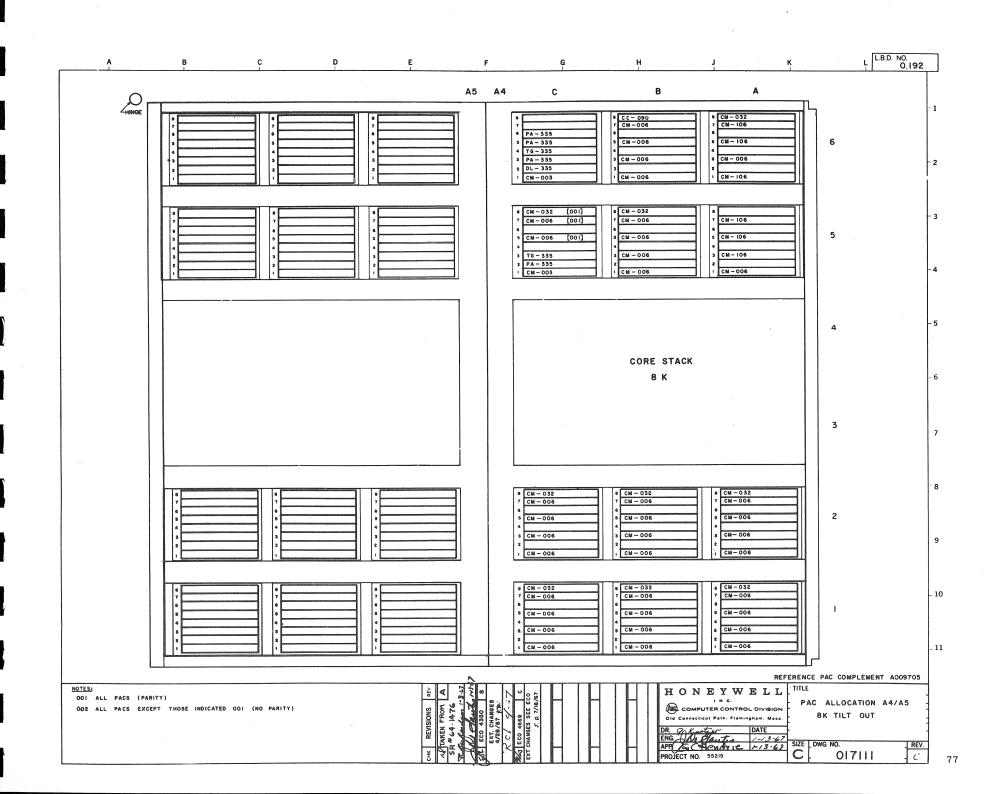


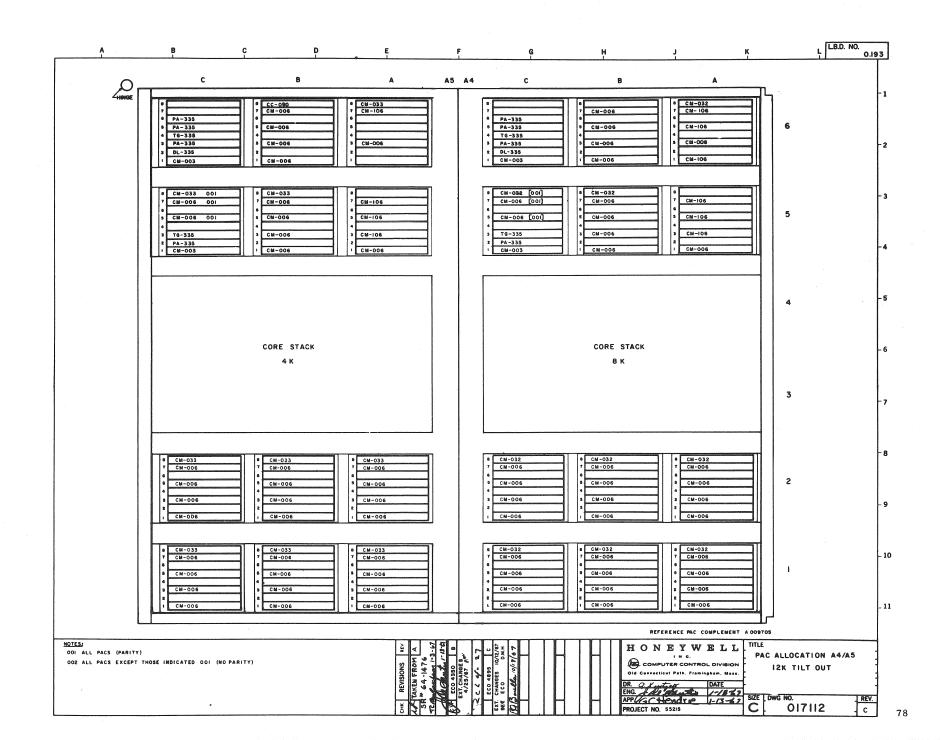


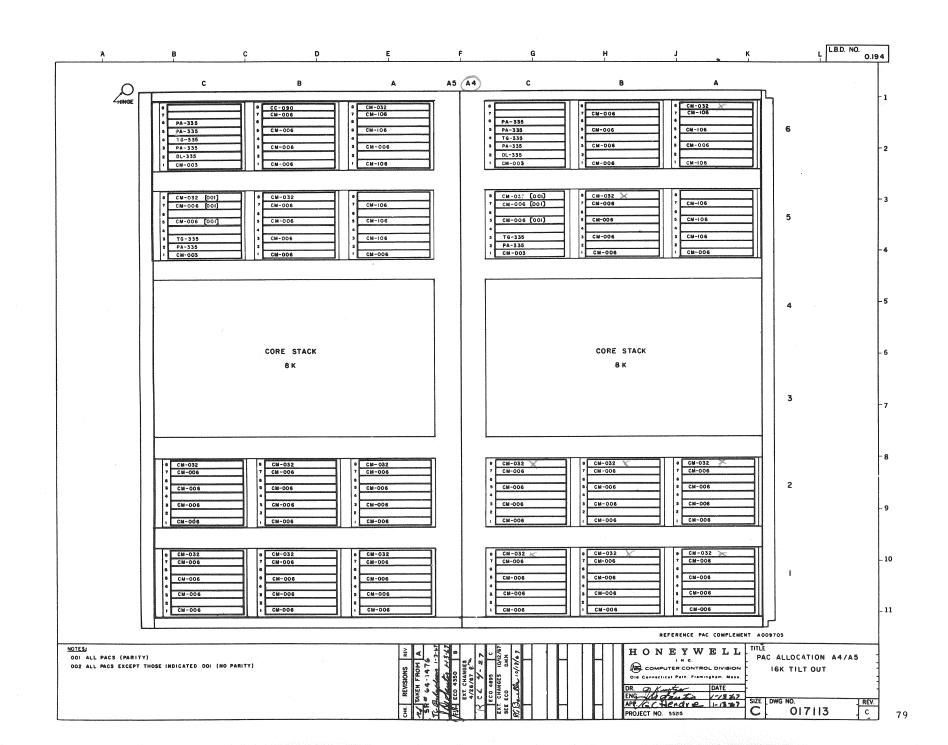


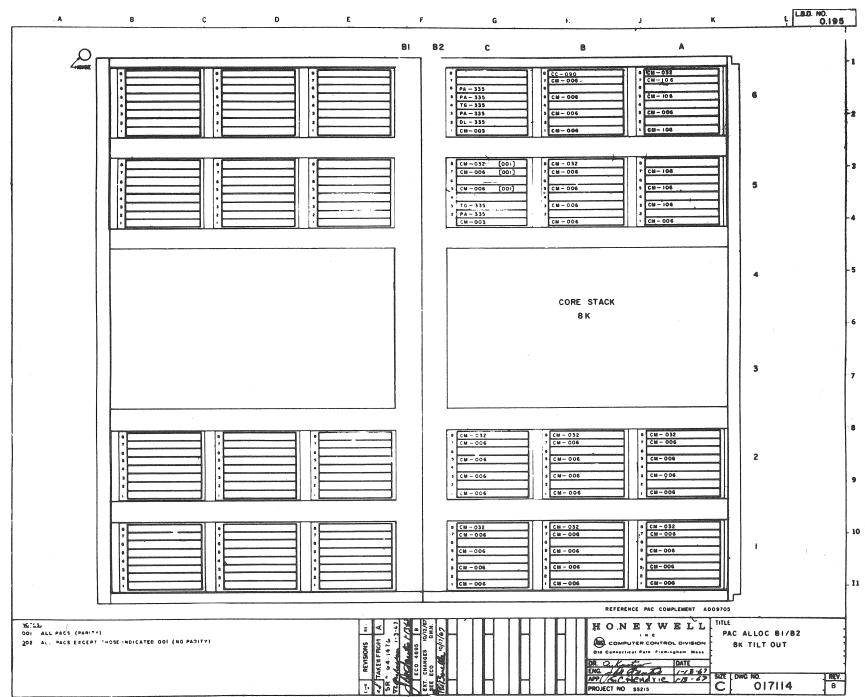




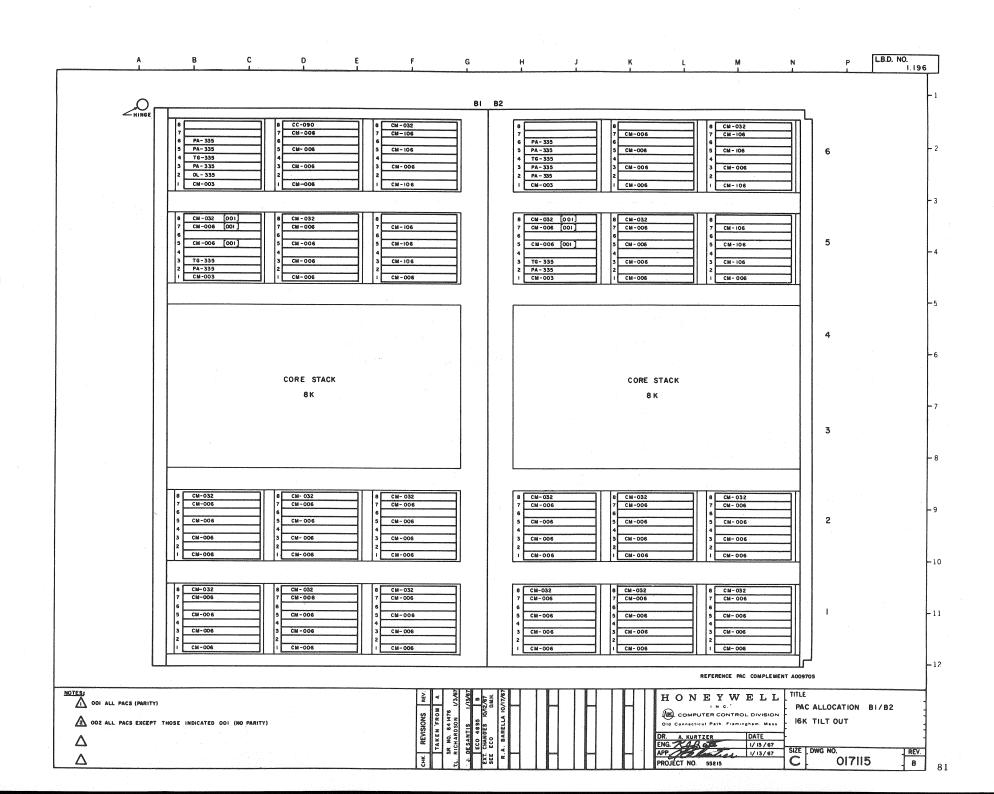


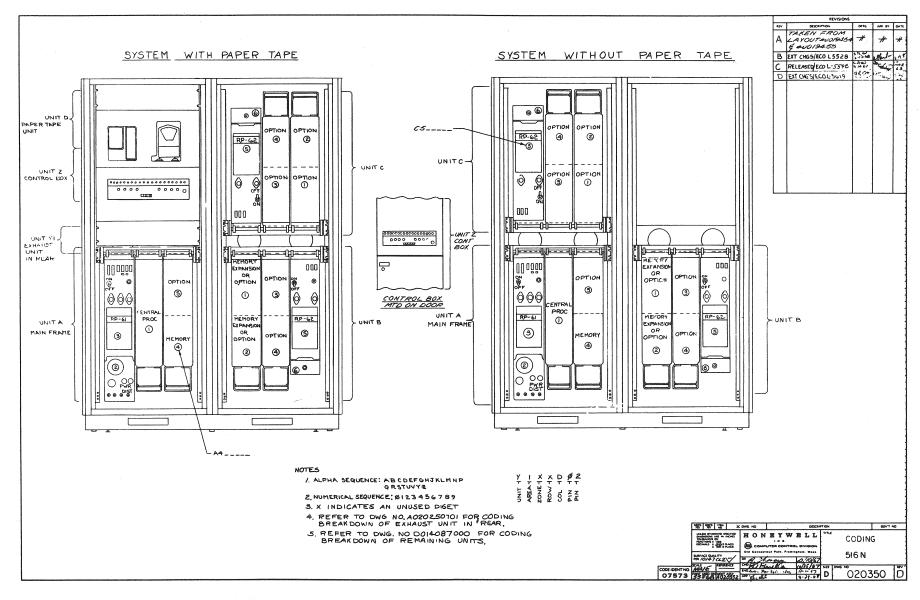






ឧ೧





_					
					•
_					
-					

